

Exhibit B



1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE EASTERN DISTRICT OF VIRGINIA
3 ALEXANDRIA DIVISION
4 CASE NO. 1:23-cv-00108-LMB-JFA

5
6 UNITED STATES OF
7 AMERICA, et al.,

8 Plaintiffs,

9 vs.

10 GOOGLE, LLC,

11 Defendant.
12

13 - HIGHLY CONFIDENTIAL -
14

15 Videotaped deposition of ANTHONY J.
16 FERRANTE, taken pursuant to notice, was held at the
17 offices of Axinn, Veltrop & Harkrider LLP, 114 West
18 47th Street, New York, New York 10036, taken
19 stenographically before MARGARET M. REIHL, RPR, CRR,
20 on Friday, February 16, 2024, commencing at 9:34
21 a.m.

22
23
24 Job No. 92916
25

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| <p>1 A P P E A R A N C E S:</p> <p>2 US DEPARTMENT OF JUSTICE ANTITRUST</p> <p>3 DIVISION</p> <p>4 BY: JULIA TARVER WOOD, ESQUIRE</p> <p>5 MICHAEL FREEMAN, ESQUIRE</p> <p>6 450 Fifth Street, NW, Suite 8700</p> <p>7 Washington, D.C. 20530</p> <p>8 (202) 307-0924</p> <p>9 julia.wood@usdoj.gov</p> <p>10 michael.freeman@usdoj.gov</p> <p>11 matthew.gold@usdoj.gov</p> <p>12 michael.wolin@usdoj.gov</p> <p>13 REPRESENTING THE UNITED STATES OF AMERICA</p> <p>14</p> <p>15 AXINN, VELTROP & HARKRIDER LLP</p> <p>16 BY: ALLISON M. VISSICHELLI, ESQUIRE</p> <p>17 1901 L Street NW</p> <p>18 Washington, D.C. 2003</p> <p>19 (202) 469-3510</p> <p>20 avissichelli@axinn.com</p> <p>21 REPRESENTING THE DEFENDANT, GOOGLE</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> | <p>1</p> <p>2 I N D E X</p> <p>3 WITNESS PAGE</p> <p>4 ANTHONY J. FERRANTE</p> <p>5 By Mr. Freeman ^</p> <p>6</p> <p>7 E X H I B I T S</p> <p>8 NO. DESCRIPTION PAGE</p> <p>9</p> <p>10 Ferrante-</p> <p>11 Lit-1 Expert Report of Anthony</p> <p>12 J. Ferrante 1/23/24 34</p> <p>13</p> <p>14 Ferrante-</p> <p>15 Lit-2 "10 Cyber Risks and Realities</p> <p>16 We're Seeing This Year -</p> <p>17 And Beyond" dated 2/24/23 83</p> <p>18</p> <p>19 Ferrante-</p> <p>20 Lit-3 2021 Ads Safety Report 143</p> <p>21</p> <p>22 Ferrante-</p> <p>23 Lit-4 Digiday article, "Unraveling</p> <p>24 header bidding's problems</p> <p>25 with user data" 3/20/17 194</p> <p>18 Ferrante-</p> <p>19 Lit-5 "How Ads.txt Took Down 3ve,</p> <p>20 As The FBI Took Down Its</p> <p>21 Creators" 12/3/18 207</p> <p>22</p> <p>23 Ferrante-</p> <p>24 Lit-6 Automatic Whitelisting for</p> <p>25 AWBId launched 12/5/13</p> <p>GOOG-AT-MDL-012551468 212</p> <p>---</p> |
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| <p>1 PAUL, WEISS, RIFKIND, WHARTON &</p> <p>2 GARRISON LLP</p> <p>3 BY: AMY J. MAUSER, ESQUIRE</p> <p>4 KATHERINE S. STEWART, ESQUIRE</p> <p>5 2001 K Street, NW</p> <p>6 Washington, D.C. 20006</p> <p>7 (202) 223-7300</p> <p>8 amauser@paulweiss.com</p> <p>9 kstewart@paulweiss.com</p> <p>10 REPRESENTING THE DEFENDANT, GOOGLE</p> <p>11</p> <p>12</p> <p>13 (VIA ZOOM):</p> <p>14 OFFICE OF THE ATTORNEY GENERAL</p> <p>15 BY: JONATHAN M. HARRISON, ESQUIRE</p> <p>16 202 NORTH 9TH STREET</p> <p>17 RICHMOND, VIRGINIA 23219</p> <p>18 (804) 786-6557</p> <p>19 JHarrison@oag.state.va.us</p> <p>20 REPRESENTING PLAINTIFF STATES</p> <p>21</p> <p>22</p> <p>23 ALSO PRESENT:</p> <p>24 JONATHAN PERRY, VIDEOGRAPHER</p> <p>25</p> | <p>1 THE VIDEOGRAPHER: We are now on</p> <p>2 the record. My name is Jonathan Perry.</p> <p>3 I am a videographer retained by Lexitas.</p> <p>4 This is a video deposition for the U.S.</p> <p>5 District Court for the Eastern District</p> <p>6 of Virginia, Alexandria Division, Case</p> <p>7 Number 1:23-cv-00108-LMB-JFA. The date</p> <p>8 is February 16th, 2024. The time is</p> <p>9 9:34 a.m.</p> <p>10 We are at the offices of Paul</p> <p>11 Weiss, 2001 K Street Northwest in</p> <p>12 Washington, DC. This deposition is</p> <p>13 being taken in the matter of the United</p> <p>14 States of America, et.al., versus</p> <p>15 Google, LLC. The name of the deponent</p> <p>16 is Anthony Ferrante. All counsel will</p> <p>17 be noted on the stenographic record.</p> <p>18 The court reporter is Peg Reihl, also</p> <p>19 with Lexitas and would you please swear</p> <p>20 in the witness.</p> <p>21 ANTHONY FERRANTE, having been</p> <p>22 duly sworn as a witness, was examined</p> <p>23 and testified as follows:</p> <p>24 BY MR. FREEMAN:</p> <p>25 Q. Good morning, sir.</p> |

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| <p>1 A. Good morning.</p> <p>2 Q. We met off the record, but my</p> <p>3 name is Michael Freeman. I work with the</p> <p>4 Department of Justice here with my colleague,</p> <p>5 Julia Wood, also with Department of Justice.</p> <p>6 I want to start just kind of with</p> <p>7 deposition ground rules, just so we're all on</p> <p>8 the same page here. You're sworn under oath,</p> <p>9 which means you are expected to tell the truth.</p> <p>10 Anything you say today can be used by the DOJ in</p> <p>11 any civil, criminal or administrative matter.</p> <p>12 Do you understand that?</p> <p>13 A. Yes, I do.</p> <p>14 Q. And so is there anything that</p> <p>15 occurred today that would prevent you from</p> <p>16 telling the truth?</p> <p>17 A. No.</p> <p>18 Q. What I'm trying to get at is</p> <p>19 there any medication that you're on that may</p> <p>20 impair your ability to tell the truth or</p> <p>21 understand why you're here today?</p> <p>22 A. Yes, I understand why I'm here,</p> <p>23 and there's no reason why I cannot tell the</p> <p>24 truth.</p> <p>25 Q. All right. So this deposition is</p> | <p>1 A. Yes, I do.</p> <p>2 Q. We'll have breaks throughout</p> <p>3 today. So if you need a break at any point in</p> <p>4 time, just let us know, and we'll do the best to</p> <p>5 accommodate that. We do typically like to break</p> <p>6 every hour or so, okay?</p> <p>7 A. Yes, sir.</p> <p>8 Q. All right. Do you agree to be</p> <p>9 bound by these rules today?</p> <p>10 A. I do.</p> <p>11 Q. All right. So I want to start</p> <p>12 with just your background, starting back to your</p> <p>13 education.</p> <p>14 So where did you go to college,</p> <p>15 sir?</p> <p>16 A. I went to Fordham University in</p> <p>17 the Bronx, New York.</p> <p>18 Q. And did you graduate from Fordham</p> <p>19 University?</p> <p>20 A. I did.</p> <p>21 Q. And a degree in what?</p> <p>22 A. Computer science.</p> <p>23 Q. What years did you attend Fordham</p> <p>24 University for undergrad?</p> <p>25 A. I believe I arrived in 1997 and</p> |
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| <p>1 obviously recorded, and so it's important that</p> <p>2 we don't talk over each one. So I will let you</p> <p>3 have full answers. We need to make sure you</p> <p>4 listen to the complete question and wait until</p> <p>5 I'm done before you answer.</p> <p>6 Do you understand that?</p> <p>7 A. Yes, I do.</p> <p>8 Q. And because there's a court</p> <p>9 reporter, obviously it's natural -- we'll be</p> <p>10 here for a few hours -- to potentially nod at</p> <p>11 times. But it's important to have verbal</p> <p>12 answers, right, you understand that?</p> <p>13 A. Yes, I do.</p> <p>14 Q. All right. And if you don't</p> <p>15 understand a particular question, just please</p> <p>16 let me know. And so if you don't do that,</p> <p>17 though, I'll assume you understand the question,</p> <p>18 okay.</p> <p>19 Do you understand that?</p> <p>20 A. Yes, sir.</p> <p>21 Q. All right. At times your</p> <p>22 attorney may make objections. Unless they</p> <p>23 instruct you not to answer, then you can still</p> <p>24 answer the question.</p> <p>25 Do you understand that?</p> | <p>1 graduated in May of 2001.</p> <p>2 Q. Did you write any papers while</p> <p>3 you were in college within the field of computer</p> <p>4 science specifically?</p> <p>5 A. I'm sure I did.</p> <p>6 Q. Okay. Were any of those papers</p> <p>7 on the field of what I'll call "advertising</p> <p>8 technology"?</p> <p>9 A. Is there a particular aspect of</p> <p>10 advertising technology?</p> <p>11 Q. Well, did you write about any</p> <p>12 aspect of advertising technology?</p> <p>13 A. Well, as you can appreciate,</p> <p>14 advertising technology has an element of</p> <p>15 security, and so I did a lot of work in</p> <p>16 undergrad in the security field.</p> <p>17 Q. Were any of your papers</p> <p>18 addressing publisher ad servers?</p> <p>19 A. Any of my papers publishing --</p> <p>20 I'm sorry, can you repeat the question?</p> <p>21 Q. Yeah, sure.</p> <p>22 Any of the papers that you wrote</p> <p>23 in college, were they on the topic of or</p> <p>24 incorporated publisher ad servers?</p> <p>25 A. They were not.</p> |

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| <p>1 Q. Were any of the papers that you</p> <p>2 wrote on the topic of ad exchanges?</p> <p>3 A. From '97 to 2001, no.</p> <p>4 Q. Were any of the papers about</p> <p>5 advertiser ad servers?</p> <p>6 A. No.</p> <p>7 Q. It's my understanding, then, you</p> <p>8 went on and got a Master's degree; is that</p> <p>9 right?</p> <p>10 A. Not immediately, but I did.</p> <p>11 Q. Okay. So what did you do</p> <p>12 immediately following graduation from your</p> <p>13 undergrad from Fordham University?</p> <p>14 A. So after I graduated from Fordham</p> <p>15 University in May of 2001, I continued to work</p> <p>16 in private practice as a security consultant. I</p> <p>17 worked at a smaller -- through college to pay</p> <p>18 for college, I worked at a smaller consultancy</p> <p>19 firm where I focused on networking, web page</p> <p>20 development and security.</p> <p>21 It was in September of 2001 that</p> <p>22 I started my new job at Ernst & Young as a</p> <p>23 security consultant. Unfortunately, my first</p> <p>24 week at work -- or forgive me, the second week</p> <p>25 of work, the second Tuesday of my first -- my</p> | <p>1 Array Technology Group. It was a great firm. I</p> <p>2 think there were maybe 20 people there. I was</p> <p>3 the college intern. I remember I beat the</p> <p>4 streets to get the job. I actually walked</p> <p>5 around with paper resumes. You remember what</p> <p>6 those look like? And I went to offices and</p> <p>7 passed them out and got the job.</p> <p>8 I worked -- I come from a very</p> <p>9 blue-collar family, so I had to pay for college</p> <p>10 and I worked -- when I did not have class, I</p> <p>11 worked at Array Technologies in New York City</p> <p>12 through my senior year. I worked through</p> <p>13 school. The summer times, of course, I worked</p> <p>14 full-time and through my senior year, which I</p> <p>15 essentially had classes two days a week and</p> <p>16 worked three days a week.</p> <p>17 And then when I graduated in May,</p> <p>18 they kept me on full-time until I started</p> <p>19 full-time at E&Y -- or Ernst & Young it was</p> <p>20 called at the time -- which was September 2001.</p> <p>21 Q. How long did you work at Ernst &</p> <p>22 Young?</p> <p>23 A. You know, as we were talking</p> <p>24 earlier, my memory is fuzzy on it. I want to</p> <p>25 say it was maybe a year, maybe 18 months. It</p> |
| Page 11 | Page 13 |
| <p>1 second week at Ernst & Young was September the</p> <p>2 11th, which I witnessed the events of 9/11</p> <p>3 firsthand in New York City. And as you can</p> <p>4 appreciate, it absolutely changed my life.</p> <p>5 So while I did continue to work</p> <p>6 at Ernst & Young for the next few months, I quit</p> <p>7 my job to go back to school to get a Master's</p> <p>8 degree in computer science at Fordham University</p> <p>9 with the goal of joining the FBI to fight the</p> <p>10 war on terrorism.</p> <p>11 It was, I want to say, 2002 is</p> <p>12 when I went back to school, September of 2002.</p> <p>13 Or maybe it was September 2003, is when I went</p> <p>14 back to graduate school.</p> <p>15 Q. So the -- if I understood you</p> <p>16 correctly, you had two different employers</p> <p>17 between graduating college and going back for</p> <p>18 your Master's degree?</p> <p>19 A. So I worked at a small boutique</p> <p>20 consultancy firm, really my sophomore year</p> <p>21 through senior year of college.</p> <p>22 Q. What's the name of that</p> <p>23 particular company?</p> <p>24 A. It's changed a few times since.</p> <p>25 When I started working there, it was called</p> | <p>1 took -- I know after 9/11 it was a very surreal</p> <p>2 world at that point, and so it took time for me</p> <p>3 to, you know, get prepared for graduate school,</p> <p>4 get applications in and so -- but I do know I</p> <p>5 started. It couldn't have been the very next</p> <p>6 September. It must have been the following</p> <p>7 September, I believe. I can't recall, to be</p> <p>8 honest.</p> <p>9 I do know I graduated in -- from</p> <p>10 graduate school with a Master's degree in</p> <p>11 computer science. I graduated, not in May, I</p> <p>12 had additional courses to take. It was more</p> <p>13 like August, and it was in August 2004. And it</p> <p>14 was January 2005, is when I entered on duty to</p> <p>15 the FBI academy in Quantico, Virginia,</p> <p>16 January 23rd, 2005.</p> <p>17 Q. When you were at Ernst & Young,</p> <p>18 was any part of your job dealing with</p> <p>19 advertising technology?</p> <p>20 A. So, again, back to -- you asked</p> <p>21 that question earlier. Advertising technologies</p> <p>22 have an element of security, and my focus was on</p> <p>23 the security aspects of internet communications.</p> <p>24 So, yes, I focused a lot on networking and</p> <p>25 security of information traversing the internet.</p> |

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| <p>1 Q. Was any of your job at Ernst &</p> <p>2 Young having to deal with publisher ad servers?</p> <p>3 A. Not that I recall.</p> <p>4 Q. Was any part of your job at Ernst</p> <p>5 & Young dealing with ad exchanges?</p> <p>6 A. Not that I recall.</p> <p>7 Q. Was any part of your job at Ernst</p> <p>8 & Young dealing with advertiser ad servers?</p> <p>9 A. Not that I recall.</p> <p>10 Q. At your time -- so back when you</p> <p>11 were at Ernst & Young, did you work with any</p> <p>12 other advertising tech companies?</p> <p>13 A. That's a broad question. Can you</p> <p>14 be more specific?</p> <p>15 Q. Sure.</p> <p>16 Did you work with -- let's start</p> <p>17 with Google in particular -- in the sale of</p> <p>18 online ads?</p> <p>19 MS. MAUSER: Object to form. You</p> <p>20 can answer.</p> <p>21 THE WITNESS: I don't really</p> <p>22 recall. I will tell you as a 21,</p> <p>23 22-year-old young professional, we had</p> <p>24 some really cool clients, but I don't</p> <p>25 recall.</p> | <p>1 processes.</p> <p>2 Q. So how did you engage or utilize</p> <p>3 the advertising system processes when you were</p> <p>4 at Array Technology Group?</p> <p>5 A. Back then, candidly it was pure</p> <p>6 programming. It was HDML and JavaScript.</p> <p>7 Q. When you're talking about search</p> <p>8 engine optimization, does that also include</p> <p>9 advertisements that appear in search results?</p> <p>10 A. No, not in '97, '98. It was --</p> <p>11 it was about getting the sites that I programmed</p> <p>12 as high on search results as possible.</p> <p>13 Q. So I guess I'm a little unclear,</p> <p>14 then, how search engine optimization is similar</p> <p>15 to publisher ad servers?</p> <p>16 A. As I said earlier, it was -- my</p> <p>17 work was programming the sites, the HTML and the</p> <p>18 JavaScript, and programming them in a way that</p> <p>19 search engines would pick them up and place them</p> <p>20 in their search results. That was the extent of</p> <p>21 my programming in 1997 and 1998 through 2001.</p> <p>22 Q. Any of the websites that you</p> <p>23 worked on during your time at Array Technology</p> <p>24 Group, were they selling any ads on their web</p> <p>25 pages?</p> |
| Page 15 | Page 17 |
| <p>1 BY MR. FREEMAN:</p> <p>2 Q. Then backtracking just a bit, I</p> <p>3 think you called it -- the company was Array</p> <p>4 Technologies, could you spell that?</p> <p>5 A. A-R-R-A-Y Technologies Group,</p> <p>6 ATG.</p> <p>7 Q. When you were at Array Technology</p> <p>8 Group, did you work in the field dealing with</p> <p>9 publisher ad servers?</p> <p>10 A. So I did a lot of work doing web</p> <p>11 programming and publishing, and search engine</p> <p>12 optimization was a thing then. It was in its</p> <p>13 very early stages. So I would say the early</p> <p>14 adoption or the early versions of search engine</p> <p>15 optimization and ad technologies existed. And,</p> <p>16 yes, I was involved with multiple clients,</p> <p>17 programming their websites and leveraging the</p> <p>18 1998, '99 through 2001 version of advertising</p> <p>19 technologies.</p> <p>20 Q. So was search engine</p> <p>21 optimization, is that the same as a publisher ad</p> <p>22 server?</p> <p>23 A. Well, it's -- in order to</p> <p>24 optimize your search engine results, you would</p> <p>25 have to engage or utilize the advertising system</p> | <p>1 A. Candidly, I'm not even sure if</p> <p>2 that was a thing back then. I believe -- I</p> <p>3 mean, if I recall correctly, Yahoo was still</p> <p>4 finding itself. I guess I can admit that</p> <p>5 sitting in the lunchroom with my colleagues in</p> <p>6 '98, we were talking about this really cool new</p> <p>7 search engine called Google, and I remember</p> <p>8 visiting Google and having it stamped "beta" in</p> <p>9 the corner. So I'm not even sure if the</p> <p>10 technologies you speak of, you're asking me</p> <p>11 about, even existed then.</p> <p>12 Q. So do you recall any of the</p> <p>13 websites that you worked on at your time at</p> <p>14 Array Technology Group selling ads on their</p> <p>15 particular website?</p> <p>16 A. I do not recall selling ads. I</p> <p>17 recall programming sites in a way that would</p> <p>18 allow them to land higher in search results.</p> <p>19 Q. Okay. So you went back to, I</p> <p>20 think you said, Fordham University for your</p> <p>21 Master's degree?</p> <p>22 A. I did.</p> <p>23 Q. And what was your Master's degree</p> <p>24 in?</p> <p>25 A. Computer science.</p> |

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| <p>1 Q. Similar question to your</p> <p>2 undergrad, did you write any papers as part of</p> <p>3 your graduate program just in the general field</p> <p>4 of computer science?</p> <p>5 A. I'm sure I did.</p> <p>6 Q. Okay. Were any of those papers</p> <p>7 that you wrote as part of your Master's program</p> <p>8 dealing with publisher ad servers?</p> <p>9 A. I do not recall.</p> <p>10 Q. Were any of the papers you wrote</p> <p>11 in your -- seeking your Master's degree about ad</p> <p>12 exchanges?</p> <p>13 A. I do not recall.</p> <p>14 Q. Were any of your papers that you</p> <p>15 wrote as part of your graduate degree part of</p> <p>16 advertiser ad servers?</p> <p>17 A. Do not recall.</p> <p>18 Q. Were any of your graduate papers</p> <p>19 on the topic of header bidding spelling</p> <p>20 spelling?</p> <p>21 A. No.</p> <p>22 Q. So I think you said you -- I</p> <p>23 think in your words was -- we were talking about</p> <p>24 Quantico, right, in January, 2005?</p> <p>25 A. Correct, the FBI Academy in</p> | <p>1 A. Sure. I'm sure I've said that</p> <p>2 before, and that was a lot of the work that I</p> <p>3 did. It was actually one of the first cases I</p> <p>4 worked, was a terrorism matter.</p> <p>5 Q. During your time as a special</p> <p>6 agent in the New York field office, how many</p> <p>7 cases were filed in criminal court where you</p> <p>8 were the primary case agent?</p> <p>9 A. Not many.</p> <p>10 Q. More than ten?</p> <p>11 A. I don't even recall. Definitely</p> <p>12 not many. I was a national security cyber</p> <p>13 agent, so I worked a lot of counter intelligence</p> <p>14 and terrorist matters, so filing them in</p> <p>15 criminal court was a rarity.</p> <p>16 As a matter of fact, I remember a</p> <p>17 case I worked when I did work criminal cyber</p> <p>18 matters, and I met the prosecutor in Southern to</p> <p>19 swear out a warrant. And she asked me to meet</p> <p>20 her at a certain place, and I said, you know,</p> <p>21 I'm not familiar with the courthouse, so it</p> <p>22 wasn't many.</p> <p>23 Q. Was there more than five?</p> <p>24 A. I don't recall.</p> <p>25 Q. Do you recall definitively that</p> |
| Page 19 | Page 21 |
| <p>1 Quantico, Virginia, January 23rd, 2005.</p> <p>2 Q. After you finished the academy --</p> <p>3 FBI Academy in Quantico, where were you</p> <p>4 assigned?</p> <p>5 A. So I graduated in May of 2005,</p> <p>6 and they sent me right back to New York City.</p> <p>7 Q. So --</p> <p>8 A. Forgive me. Sorry. Where I</p> <p>9 processed out of. I processed out of New York.</p> <p>10 Q. You were part of the New York</p> <p>11 field office?</p> <p>12 A. Correct.</p> <p>13 Q. Were you assigned to any</p> <p>14 particular unit?</p> <p>15 A. Yes, I was assigned to the</p> <p>16 national security cyber squad.</p> <p>17 Q. What were your duties as you were</p> <p>18 a special agent at this time?</p> <p>19 A. Correct, I was a special agent</p> <p>20 focusing on counter terrorism, counter</p> <p>21 intelligence, matters all with a cyber nexus</p> <p>22 spelling spelling.</p> <p>23 Q. I think I've heard you describe</p> <p>24 this time as you were hunting down terrorists;</p> <p>25 is that a fair and accurate representation?</p> | <p>1 there was at least one?</p> <p>2 A. I honestly don't recall. I was</p> <p>3 the case agent on hundreds of cases. Whether or</p> <p>4 not that case was a criminal case that was sworn</p> <p>5 in the court, like I said, there were not many.</p> <p>6 But there were many national security cases,</p> <p>7 terrorism, counter intel, and there were indeed</p> <p>8 criminal cases that I was a lead case agent on</p> <p>9 but never any that went to court.</p> <p>10 Q. Why did the criminal cases that</p> <p>11 you were the lead case agent on never go to</p> <p>12 court?</p> <p>13 A. I mean, there's a myriad of</p> <p>14 reasons why that can happen.</p> <p>15 Q. What are some of them?</p> <p>16 A. Leads go cold.</p> <p>17 Q. During your time as part of the</p> <p>18 New York field office, how many times did you</p> <p>19 testify in court as a special agent?</p> <p>20 A. I can't recall. Very few.</p> <p>21 Q. Do you recall definitively at</p> <p>22 least testifying at least once in court as a</p> <p>23 special agent?</p> <p>24 A. I honestly don't recall. I know</p> <p>25 that, you know, I worked -- I certainly worked</p> |

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| <p>1 cases, like I said, terrorism, counter intel and</p> <p>2 criminal matters. But sitting in open court and</p> <p>3 testifying in the witness stand, I can't recall.</p> <p>4 Q. During this time as part of the</p> <p>5 New York field office, how many cases did you</p> <p>6 investigate involving subjects or targets using</p> <p>7 or misusing publisher ad servers?</p> <p>8 A. In my time in the New York field</p> <p>9 office after arriving in 2005, we certainly saw</p> <p>10 a spike in the exploitation of the advertising</p> <p>11 ecosystem. So the leveraging of the advertising</p> <p>12 ecosystem as a vector in which to target users</p> <p>13 was certainly on the rise. It was something we</p> <p>14 saw every single day, so it's hard for me to put</p> <p>15 a number on how many cases I worked. But I can</p> <p>16 say there were many cases that involved the</p> <p>17 leveraging of the ecosystem as a vector to</p> <p>18 target users.</p> <p>19 Q. I want to break down, I guess,</p> <p>20 the advertising ecosystem as you phrased it.</p> <p>21 How many cases involved subjects</p> <p>22 or targets misusing publisher ad servers?</p> <p>23 A. So let's break down your</p> <p>24 question. How many cases involving subjects or</p> <p>25 targets? That's a tough question because we</p> | <p>1 arrived in 2005 through my time in the New York</p> <p>2 City field office, it was most certainly a</p> <p>3 vector that was being exploited, similar to that</p> <p>4 of spam e-mail and phishing e-mail.</p> <p>5 Q. While you might not know the</p> <p>6 precise number, was it more than a hundred?</p> <p>7 A. I don't know.</p> <p>8 Q. Was it definitively more than 50?</p> <p>9 A. So I will tell you -- because I</p> <p>10 can appreciate you wanting to have an answer</p> <p>11 here, so I will tell you that these</p> <p>12 investigations are complicated. They are not as</p> <p>13 simple as we see this person has exploited the</p> <p>14 advertising ecosystem and has targeted this</p> <p>15 entity or these groups of users. What we see is</p> <p>16 we see the victimization of end users, and that</p> <p>17 is what generates or initiates an investigation.</p> <p>18 I can tell you that I ran, led,</p> <p>19 contributed to hundreds if not thousands of</p> <p>20 investigations, and they were not always clear</p> <p>21 what had happened, how it happened, who did it,</p> <p>22 how they did it, that's the point of the</p> <p>23 investigation.</p> <p>24 And so when you ask me to put a</p> <p>25 number on it, I don't know if we're really doing</p> |
| Page 23 | Page 25 |
| <p>1 don't always know the subject or target, okay,</p> <p>2 but what we do know is what happened, which is</p> <p>3 in some cases the exploitation of the</p> <p>4 advertising ecosystem in which a -- for example,</p> <p>5 a drive-by download was leveraged, a spoof</p> <p>6 domain was leveraged. And therefore, because</p> <p>7 those elements of the advertising ecosystem were</p> <p>8 exploited, users were affected, so I knew many</p> <p>9 victims. But who was behind it was the hard</p> <p>10 part.</p> <p>11 Q. If you didn't know the identity</p> <p>12 of a subject or target, how would you open that</p> <p>13 case in the FBI?</p> <p>14 A. Well, the FBI has standards.</p> <p>15 They had the -- I believe they call it DIOG, and</p> <p>16 I mean, that's the whole point of the</p> <p>17 investigation if you know who did it. You have</p> <p>18 to -- it's not as fun if you know who did it.</p> <p>19 You have to conduct an investigation.</p> <p>20 Q. So how many cases did you open as</p> <p>21 a special agent that involved bad actors using</p> <p>22 or misusing publisher ad servers?</p> <p>23 A. I couldn't put a number on it. I</p> <p>24 couldn't put a number on it. I would just go</p> <p>25 back to my statement earlier that from when I</p> | <p>1 justice to the fact that that's what -- that's</p> <p>2 why we do investigations, is to understand that.</p> <p>3 If I knew the answer and could tell you right</p> <p>4 now, I'd be a really -- I'd be a really smart</p> <p>5 person and, right, have a crystal ball in which</p> <p>6 I can see these things. That's what we did</p> <p>7 every day in the FBI, is investigate these</p> <p>8 matters. They're complicated matters. It was a</p> <p>9 new vector, a new risk that was introduced to</p> <p>10 the industry on the internet, much so like as I</p> <p>11 said earlier, spam or phishing e-mails.</p> <p>12 I remember my first -- some of my</p> <p>13 first meetings with significant clear defense</p> <p>14 contractors where I sat them down and spoke to</p> <p>15 them about the risks of phishing e-mails and how</p> <p>16 they're being targeted to senior executives and</p> <p>17 educating them on that. Just like I remember</p> <p>18 sitting down with organizations, talking to them</p> <p>19 about how advertisements can be exploited and</p> <p>20 drive-by downloads can happen and spoof domains</p> <p>21 can occur for the facilitation of these criminal</p> <p>22 activities.</p> <p>23 But, again, it wasn't always</p> <p>24 clear as day when it started and throughout the</p> <p>25 course of the investigation.</p> |

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| <p>1 Q. Do you remember any specific case</p> <p>2 or investigation that you worked on while you</p> <p>3 were in New York City field office involving,</p> <p>4 I'll use your words, the advertising ecosystem?</p> <p>5 A. I think there's one referenced in</p> <p>6 my report.</p> <p>7 Q. And which one is that?</p> <p>8 A. I forget the name of it. If you</p> <p>9 have my report, I'm happy to reference it to</p> <p>10 you. But I do remember it involved ad fraud,</p> <p>11 and I know we arrested some Estonians</p> <p>12 responsible for it.</p> <p>13 Q. Were you the lead case agent on</p> <p>14 that particular case?</p> <p>15 A. No.</p> <p>16 Q. You were the -- a co-case agent</p> <p>17 on that case?</p> <p>18 A. Can you be more clear with the</p> <p>19 term "co"?</p> <p>20 Q. I'm sorry, are you familiar with</p> <p>21 the phrase co-case agent?</p> <p>22 A. Of course I am. I just want to</p> <p>23 make sure we're using it in the same context.</p> <p>24 Q. Okay. How would you define</p> <p>25 "co-case agent"?</p> | <p>1 partnering with Georgia Tech University?</p> <p>2 A. I don't recall -- oh, I'm sorry,</p> <p>3 let's back up. In general or on this case?</p> <p>4 Q. On this particular case?</p> <p>5 A. I don't recall.</p> <p>6 Q. I take it by that answer you</p> <p>7 remember the FBI working with Georgia Tech</p> <p>8 University on other cases?</p> <p>9 A. And to the more general question,</p> <p>10 I don't recall.</p> <p>11 Q. Do you recall a professor at</p> <p>12 Georgia Tech University by the name of Wenke</p> <p>13 Lee -- and I'll spell that: W-E-N-K-E, then</p> <p>14 last name Lee, L-E-E?</p> <p>15 A. Do I recall Professor Lee outside</p> <p>16 of these proceedings? I do not.</p> <p>17 Q. So do you know whether he</p> <p>18 assisted in that case that resulted in the</p> <p>19 Estonians being arrested?</p> <p>20 A. I don't know.</p> <p>21 Q. Why would the FBI use the</p> <p>22 assistance of private sector partners to</p> <p>23 investigate a case?</p> <p>24 A. I think it's very common and well</p> <p>25 known talking point from the government, from</p> |
| Page 27 | Page 29 |
| <p>1 A. So in the FBI there's a lead case</p> <p>2 agent. And for larger cases, that lead case</p> <p>3 agent would partner with a colleague, and they</p> <p>4 would be co-case agent. The bigger the case,</p> <p>5 the more co-case agents.</p> <p>6 Q. So using that definition, were</p> <p>7 you a co-case agent in that particular case</p> <p>8 where you arrested Estonians?</p> <p>9 A. In that particular case, I was</p> <p>10 not.</p> <p>11 Q. In that particular case, were you</p> <p>12 the affiant on any particular warrants related</p> <p>13 to that case?</p> <p>14 A. I don't think so.</p> <p>15 Q. Did you sit at counsel's table</p> <p>16 for any court proceedings related to that</p> <p>17 investigation?</p> <p>18 A. I did not.</p> <p>19 Q. In that case, did the FBI use</p> <p>20 assistance from private sector partners?</p> <p>21 A. I can't specifically recall, but</p> <p>22 I want to say yes. I mean, many times in these</p> <p>23 technical cases the FBI partnered with private</p> <p>24 industry.</p> <p>25 Q. Do you remember the FBI</p> | <p>1 the Department of Justice, from the FBI, from</p> <p>2 the Department of Homeland Security. Majority</p> <p>3 of the internet infrastructure is privately</p> <p>4 owned, and we're stronger together, so</p> <p>5 partnerships are critical in proactive and</p> <p>6 responsive cyber threats -- combating cyber</p> <p>7 threats.</p> <p>8 Q. So while you weren't case agent</p> <p>9 or affiant on any warrant, so what was your role</p> <p>10 in that case involving the arrest of six</p> <p>11 Estonians?</p> <p>12 A. I supported my colleagues.</p> <p>13 Q. What does that mean?</p> <p>14 A. I mean in a case like that is a</p> <p>15 very large case, lots of data to process.</p> <p>16 Excuse me. Lots of technologies to understand</p> <p>17 and unpack. I was one of the more technical</p> <p>18 members of our group, and so I was regularly --</p> <p>19 I was regularly consulted for guidance. I was</p> <p>20 also at that point a more seasoned agent.</p> <p>21 Q. What does that mean?</p> <p>22 A. It means I was more experienced</p> <p>23 than the younger folks, and so I would help</p> <p>24 them.</p> <p>25 Q. Did you review any data for that</p> |

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| <p>1 particular case?</p> <p>2 A. Gosh, I don't recall, but I feel</p> <p>3 like it was a all-hands-on-deck effort, so I'm</p> <p>4 not sure how I couldn't have, but I don't recall</p> <p>5 specifically.</p> <p>6 Q. For that particular case, are you</p> <p>7 aware whether the FBI reached out to Google to</p> <p>8 seek their assistance?</p> <p>9 A. It's my understanding that the</p> <p>10 government did reach out to Google.</p> <p>11 Q. For that particular</p> <p>12 investigation?</p> <p>13 A. Yes.</p> <p>14 Q. And what was Google's response?</p> <p>15 A. To be clear, again, because I was</p> <p>16 not the case agent or the co-case agent, I'm not</p> <p>17 sure who initiated that conversation, whether</p> <p>18 Google reached out to the government or the</p> <p>19 government reached out to Google. But I do know</p> <p>20 that Google was involved in the -- that</p> <p>21 operation.</p> <p>22 Q. Being part of the FBI, are you</p> <p>23 aware that sometimes the Department of Justice</p> <p>24 do press releases in regards to big arrests?</p> <p>25 A. Yes.</p> | <p>1 that are released by the Department of Justice</p> <p>2 to acknowledge outside entities that helped in</p> <p>3 the investigation?</p> <p>4 A. You know, I'm not sure if I can</p> <p>5 answer that. I didn't work in the press shop.</p> <p>6 You say is it common, are you asking that</p> <p>7 question in the context of today, or are you</p> <p>8 asking in the context of that investigation that</p> <p>9 we were speaking about earlier?</p> <p>10 I can tell you from my</p> <p>11 experiences in the FBI it's a very sensitive</p> <p>12 topic, and I don't know if there is a clear</p> <p>13 answer there.</p> <p>14 Q. Have you ever read Department of</p> <p>15 Justice press releases that acknowledges outside</p> <p>16 entities in their help of the investigation?</p> <p>17 A. I'm sure I have.</p> <p>18 Q. Did you read the press release</p> <p>19 for this particular case that you're citing the</p> <p>20 arrest of the six Estonians?</p> <p>21 A. I'm sure I have. I think I</p> <p>22 reference it in my report.</p> <p>23 Q. Is Google referenced as one of</p> <p>24 the outside entities that helped the FBI in that</p> <p>25 particular investigation?</p> |
| Page 31 | Page 33 |
| <p>1 Q. Are you aware, for this</p> <p>2 particular case, whether there was any press</p> <p>3 release by the Department of Justice?</p> <p>4 A. I think there was.</p> <p>5 Q. As part of being a special agent,</p> <p>6 have you ever been asked to contribute to the</p> <p>7 substance of any press release?</p> <p>8 A. Yes.</p> <p>9 Q. As part of that are you asked</p> <p>10 what other outside institutions deserve credit</p> <p>11 for that particular investigation?</p> <p>12 A. You know, I can't speak directly</p> <p>13 to that. The times that I was consulted, that</p> <p>14 was not a question that was asked.</p> <p>15 Q. Have you read press releases by</p> <p>16 the Department of Justice about large arrests?</p> <p>17 A. I'm sure I have.</p> <p>18 Q. Is it common in those press</p> <p>19 releases, then, for the Department of Justice to</p> <p>20 acknowledge the assistance of outside entities</p> <p>21 that helped in the investigation?</p> <p>22 A. I'm sorry, can you repeat the</p> <p>23 question?</p> <p>24 Q. Sure.</p> <p>25 Is it common in press releases</p> | <p>1 A. I can't recall. If you want to</p> <p>2 pass me my report, we can look at it.</p> <p>3 Q. Do you remember Georgia Tech</p> <p>4 University being one of the outside entities</p> <p>5 that were acknowledged for assisting in that</p> <p>6 investigation?</p> <p>7 A. As I sit here right now without</p> <p>8 the press release in front of me, I can't</p> <p>9 recall.</p> <p>10 Q. You cite another case in your</p> <p>11 report that you referenced as the FBI</p> <p>12 Minneapolis Division instituted case.</p> <p>13 Are you familiar with what I'm</p> <p>14 talking about?</p> <p>15 A. I recall referencing it in my</p> <p>16 report.</p> <p>17 Q. Did you have any personal</p> <p>18 involvement in that particular case?</p> <p>19 A. I don't think so.</p> <p>20 Q. Did any of the conduct that</p> <p>21 occurred in that particular case occur on any</p> <p>22 Google platform?</p> <p>23 A. I -- I can't answer that as I sit</p> <p>24 here right here. Can you show me my report?</p> <p>25 Can we discuss it? Can we walk through it?</p> |

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1 Q. Sure.

2 A. Can you be more specific?

3 Q. Sure.

4 MR. FREEMAN: We'll mark this as

5 Ferrante Lit Exhibit 1.

6 (Document marked for

7 identification as Ferrante-Lit

8 Deposition Exhibit No. 1.)

9 BY MR. FREEMAN:

10 Q. So for identification what's been

11 now marked as Ferrante-Lit Exhibit Number 1 is

12 your report that you made in preparation for

13 this case; is that right?

14 A. Correct.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

19 Q. Okay. So my question was in

20 relationship to this case that you talked about

21 in paragraph 18, did any of this conduct that

22 you described occur on any Google platform?

23 A. You know, I'm not sure.

24 Q. How did you gain information or

25 knowledge about this particular case?

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1 A. It's cited at the bottom,

2 footnote 14.

3 Q. Just so we're clear, when you

4 talk about footnote 14, that's the press

5 release, right?

6 A. Correct.

7 Q. Did you have any independent

8 knowledge of this particular case outside of the

9 press release?

10 A. Not that I recall.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

21 Q. Did you have any personal

22 involvement in that particular investigation?

23 A. No. I was not in the New York

24 City field office at that time.

25 Q. How did you gather information

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1 and knowledge about that particular case?

2 A. Research.

3 Q. Did you research anything beyond

4 the press release that is cited in footnote 11?

5 A. Beyond the press release?

6 Q. Yeah.

7 A. Yeah, of course.

8 Q. Okay. What did you investigate

9 beyond the press release cited in footnote 11?

10 A. Any sort of open source reporting

11 on the operation. I mean, a couple of them are

12 cited.

13 Q. What other sources of information

14 beyond the press release did you rely on to get

15 information about this particular investigation?

16 A. As I said, open source reporting.

17 Q. My question is: what open source

18 reporting did you review and rely on to gain

19 knowledge about this particular case?

20 MS. MAUSER: Object to form.

21 THE WITNESS: Well, I mean,

22 footnote 10, footnote 11, footnote 12,

23 for example, are three -- three

24 examples, are three citations that are

25 in my report to talk about the point

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1 that I'm trying to make here, which is

2 organized crime members gravitate

3 towards ad fraud because the risk to

4 reward ratio, risk to reward ratio.

5 BY MR. FREEMAN:

6 Q. Did you review any other open

7 source information about this particular case

8 other than those noted in footnotes 10, 11 and

9 12?

10 A. I'm sure I did.

11 Q. Okay. What other ones did you

12 review?

13 A. I'm not sure. I mean, I'm sure I

14 went to the internet and did as much research as

15 possible as I try to verify my information like

16 any investigator would do. And so I looked at

17 various sources and have highlighted, like I

18 said, three of them here to cite my points in

19 the expert report.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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| <p>1 within the FBI other than being a special agent</p> <p>2 in the New York field office?</p> <p>3 A. Yes.</p> <p>4 Q. I want to talk about your next</p> <p>5 position within the FBI going oldest to most</p> <p>6 recent.</p> <p>7 So after you were a special agent</p> <p>8 in the New York field office, what was your next</p> <p>9 position within the FBI?</p> <p>10 A. So when I was in the New York</p> <p>11 City field office, again, I got there in May of</p> <p>12 2005. I want to say it was sometime in 2006 or</p> <p>13 2007 I joined where -- rather I was selected to</p> <p>14 be a member of the FBI's Cyber Action Team,</p> <p>15 which is essentially a rapid deployment team</p> <p>16 within the FBI focused on significant cyber</p> <p>17 events. So I was a member of that team.</p> <p>18 A few years later I was a member,</p> <p>19 noncertified member of the Crisis Negotiation</p> <p>20 Team. And then right around that period of</p> <p>21 time, I became a certified special agent bomb</p> <p>22 technician.</p> <p>23 Q. And just so I'm clear, I think</p> <p>24 you listed three different positions within the</p> <p>25 FBI that you had all at the same time as being a</p> | <p>1 MS. MAUSER: Something keeps</p> <p>2 beeping.</p> <p>3 THE VIDEOGRAPHER: (Pause.) Off</p> <p>4 the record at 10:47.</p> <p>5 THE VIDEOGRAPHER: On the record</p> <p>6 at 10:39.</p> <p>7 BY MR. FREEMAN:</p> <p>8 Q. Okay. I'm going to reask my</p> <p>9 question right before we took that break.</p> <p>10 A. Sure.</p> <p>11 Q. Did you work on any case as part</p> <p>12 of the cyber action team relating to bad actors</p> <p>13 misusing ad exchanges?</p> <p>14 A. Not that I recall, not as a</p> <p>15 member of the cyber action team.</p> <p>16 Q. Did you work on any case as part</p> <p>17 of the cyber action team related to bad actors</p> <p>18 misusing advertiser ad servers?</p> <p>19 A. As a member of the cyber action</p> <p>20 team in that capacity, not that I recall.</p> <p>21 Q. And then am I correct that your</p> <p>22 roles as a crisis negotiator or bomb tech didn't</p> <p>23 relate to publisher ad servers?</p> <p>24 A. It did not.</p> <p>25 Q. Or ad exchanges?</p> |
| Page 43 | Page 45 |
| <p>1 special agent in the New York field office?</p> <p>2 A. So I was a member of the cyber</p> <p>3 action team, yes, through my time in New York,</p> <p>4 whenever I got on that. I believe it was 2006</p> <p>5 through -- actually through my time at</p> <p>6 headquarters, and then I forget what year, but I</p> <p>7 did become a member of the crisis negotiation</p> <p>8 team.</p> <p>9 I stepped down from the crisis</p> <p>10 negotiation team when I joined the special agent</p> <p>11 and bomb technician program. I served on that</p> <p>12 team, and I forget when but I became a certified</p> <p>13 special agent bomb technician maybe in 2009.</p> <p>14 And I served as a bomb technician through the</p> <p>15 remainder of my time in New York City.</p> <p>16 Q. Did you work on any case as part</p> <p>17 of the cyber action team relating to bad actors</p> <p>18 misusing publisher ad servers?</p> <p>19 A. Not that I recall. Not as a</p> <p>20 member of the cyber action team.</p> <p>21 Q. Did you work on any case as part</p> <p>22 of the cyber action team relating to bad actors</p> <p>23 misusing ad exchanges?</p> <p>24 MR. FREEMAN: Can we go off just</p> <p>25 for 30 seconds?</p> | <p>1 A. It did not.</p> <p>2 Q. Or advertiser ad servers?</p> <p>3 A. It did not.</p> <p>4 Q. Okay. So eventually you leave</p> <p>5 New York City, right?</p> <p>6 A. I did.</p> <p>7 Q. But then you're still part of the</p> <p>8 FBI, right?</p> <p>9 A. Correct.</p> <p>10 Q. Okay. So what's your next</p> <p>11 position with the FBI after you leave New York</p> <p>12 City?</p> <p>13 A. So in 2013, I believe it was</p> <p>14 July 2013, I promoted down to FBI headquarters</p> <p>15 where I started as a supervisory special agent</p> <p>16 at this point, and I started as a congressional</p> <p>17 liaison in the cyber division working in the</p> <p>18 front office. I was in that post, I want to</p> <p>19 say, weeks, maybe a few months until I started</p> <p>20 serving as the de facto chief of staff and</p> <p>21 principal advisor to the assistant director in</p> <p>22 charge of the cyber division.</p> <p>23 Q. I want to go back then when you</p> <p>24 were a supervisor special agent and</p> <p>25 congressional liaison in that timeframe.</p> |

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|---|---|
| <p style="text-align: right;">Page 46</p> <p>1 So were you supervising any</p> <p>2 special agents during that timeframe?</p> <p>3 A. It's a good question. I did not</p> <p>4 have a squad, but I certainly oversaw programs</p> <p>5 and folks on our front office staff.</p> <p>6 Q. What type of programs did you</p> <p>7 oversee during this particular timeframe?</p> <p>8 A. Well, at that time -- I mean when</p> <p>9 I first got there it was -- I was responsible</p> <p>10 for the congressional affairs portfolio. So my</p> <p>11 duties involved me being intimately involved</p> <p>12 with all of our matters, criminal and national</p> <p>13 security and ensuring that we were doing</p> <p>14 everything we could to advertise our good</p> <p>15 work -- not advertise -- to make sure Capitol</p> <p>16 Hill was aware of our good work. And so that</p> <p>17 happened through various methods, whether they</p> <p>18 were verbal briefings to various committees,</p> <p>19 paper notifications, one to one meetings.</p> <p>20 I worked very closely with the</p> <p>21 FBI's office of congressional affairs and DOJ's</p> <p>22 office of congressional affairs, but DOJ had a</p> <p>23 different name for it, I forget it.</p> <p>24 Q. Okay. If I caught all that,</p> <p>25 during this timeframe you gave verbal briefings</p> | <p style="text-align: right;">Page 48</p> <p>1 earlier that it's a very broad topic. And as I</p> <p>2 said before, the advertising ecosystem, we saw</p> <p>3 an uptick in it being used as a vector to which</p> <p>4 consumers were being targeted.</p> <p>5 And so did we give briefings to</p> <p>6 members of Congress about domain spoofing, and</p> <p>7 malvertising and drive-by downloads? Of course.</p> <p>8 I mean, that was what we did in the cyber</p> <p>9 division, was investigator those matters.</p> <p>10 Whether or not we stood before members of</p> <p>11 Congress and attributed it to the advertising</p> <p>12 ecosystem, I can't answer that as I sit here in</p> <p>13 this chair. But the threats that existed on --</p> <p>14 in that ecosystem, that's all we briefed them</p> <p>15 on.</p> <p>16 Q. What type of products do you</p> <p>17 include when you say the phrase "advertising</p> <p>18 ecosystem"?</p> <p>19 A. Well, when I use that phrase, I</p> <p>20 am referring to from -- I mean, in this</p> <p>21 particular instance, a consumer sitting at their</p> <p>22 computer. And when I say "consumer," let me be</p> <p>23 more specific and just say a general US citizen</p> <p>24 sitting at their computer, browsing the internet</p> <p>25 and visiting various websites.</p> |
| <p style="text-align: right;">Page 47</p> <p>1 to members of Congress; is that what you're</p> <p>2 talking about?</p> <p>3 A. Correct.</p> <p>4 Q. And then similarly with -- you</p> <p>5 said paper notifications that were paper</p> <p>6 notifications to members of Congress?</p> <p>7 A. Yeah, they called them</p> <p>8 congressional notifications. They went up to</p> <p>9 the Hill. Whether or not anyone read them, I</p> <p>10 don't know.</p> <p>11 Q. Then you said you had, at times,</p> <p>12 one-on-one meetings, is that with members of</p> <p>13 Congress?</p> <p>14 A. Or staff, yeah, representatives</p> <p>15 or staff.</p> <p>16 Q. Do you recall giving any verbal</p> <p>17 briefings to members of Congress or their staff</p> <p>18 about bad actors misusing publisher ad servers?</p> <p>19 A. I can't recall.</p> <p>20 Q. What about verbal briefings to</p> <p>21 members of Congress or their staff about bad</p> <p>22 actors misusing ad exchanges?</p> <p>23 A. I mean, the question as you ask</p> <p>24 it, I'm not sure. I mean, even the previous</p> <p>25 question. I want to go back to what I said</p> | <p style="text-align: right;">Page 49</p> <p>1 When I talk about security risks,</p> <p>2 I talk -- I'm referring to that US citizen</p> <p>3 sitting at that computer, using that web</p> <p>4 browser, browsing to different internet sites</p> <p>5 and being targeted through advertisements,</p> <p>6 drive-by downloads, spoof domains, scareware and</p> <p>7 others. That was a new vector that we saw in</p> <p>8 the government from my time in New York through</p> <p>9 my time at headquarters.</p> <p>10 Q. Do you include publisher ad</p> <p>11 servers as part of the advertising ecosystem?</p> <p>12 A. The larger ecosystem when</p> <p>13 speaking about advertising?</p> <p>14 Q. I'm going back to how you used</p> <p>15 the phrase. You used the phrase multiple times</p> <p>16 today, "advertising ecosystem," right?</p> <p>17 A. Yes.</p> <p>18 Q. What I'm trying to get at is when</p> <p>19 you use the phrase, "advertising ecosystem," are</p> <p>20 you including publisher ad servers as part of</p> <p>21 that ecosystem?</p> <p>22 A. Sure.</p> <p>23 Q. Are you including ad exchanges as</p> <p>24 part of that ecosystem?</p> <p>25 A. Yes.</p> |

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1 Q. Are you including advertiser ad
 2 servers as part of that ecosystem?
 3 A. I'm sorry, can you repeat that?
 4 Q. Yeah.
 5 Are you including advertiser add
 6 servers as part of that ecosystem?
 7 A. Advertiser ad servers, yes.
 8 Q. Is it possible for domain
 9 spoofing to occur outside of the advertising
 10 ecosystem?
 11 A. Of course.
 12 Q. Is it possible for drive-by
 13 downloads to occur outside the advertising
 14 ecosystem?
 15 A. That's a complicated question.
 16 Can you be more specific?
 17 Q. Have you ever seen drive-by
 18 downloads occur outside of publisher ad servers,
 19 the ad exchange or advertiser ad servers?
 20 A. So then in your hypothetical, we
 21 have a web browser? Do we have a web browser?
 22 Q. I'm asking not in hypothetical
 23 terms.
 24 A. Okay.
 25 Q. Did you see, as a member of the

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1 FBI, drive-by downloads occur outside the
 2 publisher ad servers, the ad exchange or the
 3 advertiser ad servers markets?
 4 MS. MAUSER: Object to form.
 5 THE WITNESS: I think that's a
 6 complicated question.
 7 A drive-by download can exist
 8 just sitting on a web page. It has
 9 nothing to do with the advertising.
 10 Yes, I've seen that happen before.
 11 BY MR. FREEMAN:
 12 Q. So I want to go back to: did you
 13 give any verbal briefings to members of Congress
 14 or their staff about bad actors misusing ad
 15 exchanges?
 16 A. Specifically ad exchanges, I do
 17 not recall. Specifically noting and using the
 18 term "ad exchanges" or even the "advertising
 19 ecosystem," I do not recall.
 20 I can tell you that the risks
 21 that we saw that were being delivered, the pay
 22 loads, the vectors being delivered to consumers,
 23 to these US citizens is what we briefed because
 24 that's what we did every day.
 25 Q. That included risk outside of the

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1 advertising ecosystem, right?
 2 A. Yes. And to be clear, I don't --
 3 as you ask these questions, I don't -- yes.
 4 Q. Did you author any congressional
 5 notifications about bad actors misusing
 6 publisher ad servers?
 7 A. I can't recall.
 8 Q. Did you author any congressional
 9 notifications about bad actors misusing ad
 10 exchanges?
 11 A. I can't recall. I have to
 12 imagine they may be public. I can tell you it
 13 wasn't uncommon to issue a notification or
 14 briefing on a bot net. I can tell you
 15 specifically we did extensive work in the bot
 16 net -- in the bot net domain, in the bot net
 17 space.
 18 So as I sit here and I say I
 19 can't recall, I'm happy to go back and check
 20 because I'm sure some of that work was
 21 associated with advertising -- the advertising
 22 ecosystem. I just can't recall right now.
 23 Q. Did you ever testify in court
 24 while being a supervisory special agent with
 25 also being the congressional liaison?

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1 A. No.
 2 Q. Did you ever testify in front of
 3 Congress when you were in that particular
 4 position?
 5 A. No.
 6 Q. When you were in that position,
 7 did congressional members or their staff make
 8 inquiries or requests to you?
 9 A. Yes.
 10 Q. Do you recall any specific
 11 request from a member of Congress or their staff
 12 about the advertising ecosystem?
 13 A. Specifically the advertising
 14 ecosystem?
 15 Q. Yes.
 16 A. That term, "advertising"?
 17 Q. Let's start there, yes.
 18 A. The answer is no.
 19 Q. Do you recall any specific
 20 request from a member of Congress or their staff
 21 about publisher ad servers?
 22 A. Those exact terms?
 23 Q. Yes.
 24 A. No.
 25 Q. Do you recall any specific

| Page 54 | Page 56 |
|---|---|
| <p>1 request from a member of Congress or their staff</p> <p>2 about ad exchanges?</p> <p>3 A. Again, those specific terms?</p> <p>4 Q. That's correct.</p> <p>5 A. I cannot recall.</p> <p>6 Q. Do you recall any specific</p> <p>7 request from a member of Congress or their staff</p> <p>8 about advertiser ad networks?</p> <p>9 A. Those specific words, no, I</p> <p>10 cannot recall.</p> <p>11 Q. So I think, then, you said the</p> <p>12 next position within the FBI, you were still a</p> <p>13 supervising special agent but also the chief of</p> <p>14 staff; is that right?</p> <p>15 A. That is correct.</p> <p>16 Q. You were the chief of staff to</p> <p>17 who?</p> <p>18 A. To the assistant director of the</p> <p>19 cyber division, Joseph Demarest.</p> <p>20 Q. When did you have that particular</p> <p>21 position?</p> <p>22 A. Officially, I can't recall. As I</p> <p>23 said, I got there in July of 2013. I served in</p> <p>24 that congressional liaison post for a few</p> <p>25 months. Unofficially, I became essentially the</p> | <p>1 the assistant director overseeing the</p> <p>2 administratively and operationally everything</p> <p>3 that was going on in the division. There were</p> <p>4 five -- four or five sections, section chiefs.</p> <p>5 Within those sections, unit chiefs.</p> <p>6 I mean, I was the conductor that</p> <p>7 kept all the trains running on time.</p> <p>8 Q. Would you author any memos, then,</p> <p>9 to the assistant director of -- in the cyber</p> <p>10 division?</p> <p>11 A. That's a good question. If I</p> <p>12 could have avoided it, I would have. I'm sure I</p> <p>13 authored memos to divisional staff, to the</p> <p>14 field. But I also oversaw my colleagues</p> <p>15 authoring them and pushing them out.</p> <p>16 Q. Do you recall authoring any memo</p> <p>17 during this timeframe about the advertising</p> <p>18 ecosystem?</p> <p>19 A. Me personally authoring?</p> <p>20 Q. Yeah.</p> <p>21 A. No, I did not author.</p> <p>22 Q. During this time how many cases</p> <p>23 did you supervise where targets or subjects were</p> <p>24 misusing the advertising ecosystem?</p> <p>25 A. You know, that's an excellent</p> |
| Page 55 | Page 57 |
| <p>1 acting chief of staff. I don't recall when I</p> <p>2 was officially named, but I eventually was named</p> <p>3 the 15 and the full bird chief of staff for the</p> <p>4 cyber division spelling spelling.</p> <p>5 Q. When you say you were eventually</p> <p>6 named -- did you say 15 like the number?</p> <p>7 A. GS15.</p> <p>8 Q. Yeah, meaning like the pay scale?</p> <p>9 A. Correct. I was a 14 as a</p> <p>10 supervisory special agent.</p> <p>11 Q. During the time that you were</p> <p>12 chief of staff, did you supervise other FBI</p> <p>13 special agents?</p> <p>14 A. Yes.</p> <p>15 Q. Did you have a squad?</p> <p>16 A. Yes.</p> <p>17 Q. How many members were on your</p> <p>18 squad?</p> <p>19 A. That's a good question. I don't</p> <p>20 recall. Twelve, 15, ten. It ebbed and flowed.</p> <p>21 It was essentially the front-office operations.</p> <p>22 Q. Other than supervising other</p> <p>23 special agents, did you have any other role as</p> <p>24 chief of staff?</p> <p>25 A. I was the principal advisor to</p> | <p>1 question. And as I sit here right now, I can't</p> <p>2 answer it. I can tell you there were cases.</p> <p>3 Q. Do you recall the specifics of</p> <p>4 any of those cases?</p> <p>5 A. No.</p> <p>6 Q. Did they result in criminal</p> <p>7 prosecutions?</p> <p>8 A. I can't recall as I sit here</p> <p>9 right now.</p> <p>10 Q. Were any of these cases that you</p> <p>11 supervised during this timeframe involved</p> <p>12 subjects or targets misusing header bidding</p> <p>13 wrappers?</p> <p>14 A. Yeah, I mean, at that point in</p> <p>15 time from that perspective, again, as I worked</p> <p>16 in that role with the assistant director. As I</p> <p>17 said earlier, we saw more and more of those</p> <p>18 security risks being exploited or used -- excuse</p> <p>19 me -- as a vector to target US citizens.</p> <p>20 And of course through the course</p> <p>21 of our investigation, we wanted to know how it</p> <p>22 was happening. And so we saw more and more of</p> <p>23 our work taking us to the advertising ecosystem.</p> <p>24 So was I involved in case</p> <p>25 briefings, case updates, trade craft, knowledge</p> |

| Page 58 | Page 60 |
|---|---|
| <p>1 shares, attribution? Yeah, I was involved in</p> <p>2 all of that.</p> <p>3 Q. How many cases did you supervise</p> <p>4 that involved bad actors using header bidding</p> <p>5 wrappers?</p> <p>6 A. So I think we should maybe level</p> <p>7 set. And when you say the term "supervise," now</p> <p>8 we're not talking about the case agent or</p> <p>9 co-case agent, correct?</p> <p>10 Q. If I understand you correctly,</p> <p>11 during this timeframe you didn't have any</p> <p>12 independent cases in which you were the case</p> <p>13 agent; is that correct?</p> <p>14 A. That is correct.</p> <p>15 Q. Okay.</p> <p>16 A. At headquarters I did not serve</p> <p>17 as a case agent or a co-case agent on any case.</p> <p>18 Q. So my question when we talk about</p> <p>19 supervisors, my understanding you had your own</p> <p>20 squad, right?</p> <p>21 A. I had a squad.</p> <p>22 Q. And just so we're clear with</p> <p>23 everyone who is not in this world, "squad" means</p> <p>24 other special agents?</p> <p>25 A. Other special agents and</p> | <p>1 out of headquarters except for very, very</p> <p>2 special ones.</p> <p>3 All cases are run out of the</p> <p>4 field. The field is program managed, various</p> <p>5 topics from headquarters, so the field takes</p> <p>6 their cases, and they report them up to their</p> <p>7 program manager. And at that time, we had</p> <p>8 rolled out a new way of conducting</p> <p>9 investigations where we had strategic offices</p> <p>10 and tactical offices. And so there was some --</p> <p>11 there were field offices working specific cases</p> <p>12 that would then report into headquarters.</p> <p>13 Now, that reporting into</p> <p>14 headquarters is where it fell on my desk, and</p> <p>15 that choreographing and understanding of the</p> <p>16 cases and making sure everybody was coordinated</p> <p>17 and everybody knew what was going on, not only</p> <p>18 within the field offices, other field offices</p> <p>19 within head quarters; making sure that our other</p> <p>20 government agencies were briefed on these</p> <p>21 various cases and make sure the Hill was aware</p> <p>22 of what was going on, make sure the brass within</p> <p>23 the Hoover Building was aware of these cases.</p> <p>24 So that was my responsibility when I say I</p> <p>25 oversaw.</p> |
| Page 59 | Page 61 |
| <p>1 professional staff, yes.</p> <p>2 Q. And you said that's roughly --</p> <p>3 you had roughly -- it ebbed and flowed but with</p> <p>4 roughly ten special agents?</p> <p>5 A. Yeah, ten to 12.</p> <p>6 Q. When I talk about supervise, I'm</p> <p>7 talking about supervising special agents who</p> <p>8 were the case agent on cases involving bad</p> <p>9 actors misusing header bidding wrappers?</p> <p>10 A. So that's where I think, you</p> <p>11 know, we just have to unpack it together as we</p> <p>12 step through it. As the chief of staff, my</p> <p>13 responsibility was to oversee operationally,</p> <p>14 administratively all cases in the FBI cyber</p> <p>15 division so --</p> <p>16 Q. Let me stop you there just so</p> <p>17 we're clear.</p> <p>18 Including those not investigated</p> <p>19 by members of your squad?</p> <p>20 A. My squad?</p> <p>21 Q. Yeah.</p> <p>22 A. The front-office squad? None of</p> <p>23 them were doing any investigations. At the FBI</p> <p>24 all investigations are done at the field level,</p> <p>25 from the field office. There are no cases run</p> | <p>1 I think you're referring to the</p> <p>2 term "supervising" in the traditional sense,</p> <p>3 meaning like a subordinate and boss. As the</p> <p>4 chief of staff that was most certainly not my</p> <p>5 role. It was way more than that.</p> <p>6 Q. So the ten or so special agents</p> <p>7 on your squad, they were not independently doing</p> <p>8 investigations?</p> <p>9 A. They were not.</p> <p>10 Q. Do you recall any specific</p> <p>11 investigation or case involving the misuse of</p> <p>12 header bidding wrappers?</p> <p>13 A. I'm sorry, can you repeat the</p> <p>14 question?</p> <p>15 Q. Yeah.</p> <p>16 I think you previously testified</p> <p>17 that you did recall investigations of subjects</p> <p>18 or targets misusing header bidding wrappers; is</p> <p>19 that right?</p> <p>20 A. That is correct.</p> <p>21 Q. So my question is: do you recall</p> <p>22 specific ones that involved actors, subjects or</p> <p>23 targets misusing header bidding wrappers?</p> <p>24 A. So when you say do I recall</p> <p>25 specific ones, you have to be more specific. I</p> |

| Page 62 | Page 64 |
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| <p>1 remember cases involving header wrappers. I</p> <p>2 recall many cases involving header wrappers.</p> <p>3 Who was under investigation, how it occurred is</p> <p>4 a different story. Where it occurred, that</p> <p>5 is -- that is where I think we just need to</p> <p>6 unpack and step through.</p> <p>7 Q. Sure.</p> <p>8 Do you recall what specific field</p> <p>9 offices were investigating subjects or targets</p> <p>10 misusing header bidding wrappers?</p> <p>11 A. I do not.</p> <p>12 Q. Do you recall the name of any</p> <p>13 individual who was a subject or target of an</p> <p>14 investigation involving the misuse of header</p> <p>15 bidding wrappers?</p> <p>16 A. I do not. You have to appreciate</p> <p>17 from the FBI cyber division headquarters perch,</p> <p>18 I mean, there are thousands of cases. So</p> <p>19 knowing the name of the actual individual, the</p> <p>20 target, it just wasn't something that I would</p> <p>21 do.</p> <p>22 Q. Do you recall the name of an</p> <p>23 entity that was a subject or target involving</p> <p>24 the misuse of header bidding wrappers?</p> <p>25 A. I mean, not as I sit here right</p> | <p>1 October of 2015.</p> <p>2 Q. How long did you have that role?</p> <p>3 A. I think it was just under two</p> <p>4 years. I served for the last 18 months in the</p> <p>5 Obama administration, and then a few months of</p> <p>6 the Trump administration. As an FBI employee I</p> <p>7 was apolitical, so I went back to work at the</p> <p>8 Whitehouse on January 21st, 2017, worked for a</p> <p>9 few months there on the National Security</p> <p>10 Council. I served as the director for cyber</p> <p>11 incident response and the cyber directorate.</p> <p>12 Q. Did you conduct any</p> <p>13 investigations while you had this joint duty</p> <p>14 assignment?</p> <p>15 A. No, I had to give up my</p> <p>16 investigative work.</p> <p>17 Q. Were you supervising other</p> <p>18 individuals, other special agents within the FBI</p> <p>19 during this time?</p> <p>20 A. No.</p> <p>21 Q. Did you ever testify in court</p> <p>22 when you held this position or this joint duty</p> <p>23 assignment?</p> <p>24 A. I did not.</p> <p>25 Q. Did you ever testify in front of</p> |
| Page 63 | Page 65 |
| <p>1 now.</p> <p>2 Q. During this timeframe as being</p> <p>3 chief of staff, did you ever testify in court?</p> <p>4 A. No, I thought we answered that</p> <p>5 one.</p> <p>6 Q. Did you ever testify in front of</p> <p>7 Congress --</p> <p>8 A. I did not.</p> <p>9 Q. -- in that role?</p> <p>10 Did you testify in any other type</p> <p>11 of proceeding that would not be criminal court</p> <p>12 or Congress?</p> <p>13 A. And I assume your -- when you say</p> <p>14 "testify," you are speaking the traditional</p> <p>15 sense, raise-your-right-hand testimony?</p> <p>16 Q. That's correct?</p> <p>17 A. Then, no, not that I recall. I</p> <p>18 will say that I regularly walked the Hill with</p> <p>19 my boss and gave briefings to members and their</p> <p>20 staff.</p> <p>21 Q. Did you have any other positions</p> <p>22 within the FBI that we haven't talked about?</p> <p>23 A. I became -- I took a joint duty</p> <p>24 assignment and moved over to the National</p> <p>25 Security Council in the Whitehouse in 2015,</p> | <p>1 Congress when you had this position?</p> <p>2 A. I did not.</p> <p>3 Q. Did you ever testify in any other</p> <p>4 proceeding, other than court or Congress, when</p> <p>5 you had this -- when you had this position?</p> <p>6 A. Again, when you say "testify,"</p> <p>7 we're just going to assume that it is the</p> <p>8 traditional sense raising your right hand and</p> <p>9 giving testimony, correct?</p> <p>10 Q. That's correct.</p> <p>11 A. Yeah, no, I did not.</p> <p>12 Q. So during your time as an FBI --</p> <p>13 I'm saying from the time you reported to</p> <p>14 Quantico to the time you left the FBI, did you</p> <p>15 ever testify in Federal Court?</p> <p>16 A. I can't recall.</p> <p>17 Q. Did you ever testify in State</p> <p>18 Court?</p> <p>19 A. I can't recall.</p> <p>20 Q. So after you left the National</p> <p>21 Security Council, what did you do next in your</p> <p>22 career?</p> <p>23 A. So in April of 2017 I resigned</p> <p>24 from government service and went into private</p> <p>25 practice the same month.</p> |

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| <p style="text-align: right;">Page 66</p> <p>1 Q. Who was your employer when you 2 left government service in April of 2017? 3 A. Who did I leave government 4 service for? 5 Q. Yeah, when you left, who did you 6 work for? 7 A. When I left, I worked for the 8 U.S. government. My next post was in private 9 practice where I started working at FTI 10 Consulting, my current employer. 11 Q. And you've been continuously 12 employed by FTI Consulting from April of 2017 to 13 present? 14 A. Correct. 15 Q. Since you've been with FTI 16 Consulting, consultants, how many times have you 17 testified in court? 18 A. I can't recall. I can tell you 19 that the public or the unsealed cases are listed 20 in my CV. 21 Q. Are you suggesting that there are 22 cases that you testified in that are under seal? 23 A. In court? 24 Q. Yeah. My question was: how many 25 times have you testified in court?</p> | <p style="text-align: right;">Page 68</p> <p>1 your testimony on the Hill a couple of years 2 ago? 3 A. I forget exactly. I want to say 4 maybe it was the adoption of 5G and the 5 associated risks. It should be listed. 6 Q. Okay. So now I want to talk 7 about the two cases that you just cited where 8 you testified in court. Let's start with the 9 Proofpoint, Incorporated case. 10 Did a court certify you as an 11 expert witness in that particular case? 12 A. They did. 13 Q. And what was the field of 14 expertise in which they certified you in? 15 A. Reasonable measures as a cyber 16 security expert. The exact language I know is 17 on the record. 18 Q. What were you asked to opine 19 about in that particular case? 20 A. The reasonable measures that 21 Proofpoint took to protect their intellectual 22 property. 23 Q. What type of intellectual 24 property did they have? 25 A. Source code, documents.</p> |
| <p style="text-align: right;">Page 67</p> <p>1 A. Yeah, I can't recall. I can tell 2 you -- again, I'm not an attorney, so I'm not 3 sure -- I don't pretend to know how that works. 4 But the cases that I am allowed to disclose are 5 written in my CV. If you want to walk through 6 them, I can tell you which ones ended up in 7 court and which ones didn't. 8 Q. So how many times have you 9 testified under oath in court? 10 A. In a courtroom, right? Because 11 we're under oath today, but we're not in a 12 courtroom. 13 Q. In a courtroom? 14 A. Okay. Let's look. So there are 15 two expert retentions Proofpoint, the via day 16 secure spelling spelling and then CDK Global, 17 those were in a courtroom. 18 And I can tell you that using the 19 traditional sense of being under oath, I 20 testified up on the Hill a couple years ago for 21 one of the committees. I forget which one. 22 Q. Let's go back, then, to that 23 before we get to your retention as an FTI 24 consultant. 25 What was the subject matter of</p> | <p style="text-align: right;">Page 69</p> <p>1 Q. Does Proofpoint Incorporate -- 2 Incorporated operate in the advertising 3 ecosystem? 4 A. I'm not sure I can answer that 5 when you say "they operate." I'm sure they do 6 advertisings. 7 Q. Was part of -- was part of your 8 testimony discussing Proofpoint's intellectual 9 property as it relates to any product they have 10 in the advertising ecosystem? 11 A. Again, can you reask the 12 question, and can we step through it? 13 Q. Well, the source code -- let's 14 start there. You said you testified about 15 source code. 16 A. Source code and documents. 17 Q. Okay. Let's talk about just the 18 source code for a moment. 19 A. Okay. 20 Q. Was it source code relating to 21 the advertising ecosystem? 22 A. I can't say for certain as I sit 23 here right now, but I will -- I will say I do 24 not think so. 25 Q. And then similar question about</p> |

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1 the documents as you indicated.
2 Were the documents that you
3 reference as intellectual property of Proofpoint
4 related to the advertising ecosystem?
5 A. Again, as I sit here right now, I
6 can't say definitively, but I know it was a lot
7 of material.
8 Q. Okay. Then the second one in
9 which you've testified, right, is just the
10 letters C-D-K Global, right, you see that?
11 A. Correct.
12 Q. Did the court in that particular
13 case certify you as an expert witness?
14 A. They did.
15 Q. In what field?
16 A. The security field. The exact
17 language I don't know, but I know there's a
18 transcript.
19 Q. "Security field," meaning cyber
20 security field?
21 A. Cyber security.
22 Q. What were you asked to opine
23 about?
24 A. Sensitive data and the risks of
25 that sensitive data and how passing that

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1 sensitive data without controls is very
2 dangerous and puts consumers, specifically US
3 consumers at risk, while in this case, Arizona
4 consumers.
5 Q. Were you retained by CDK Global?
6 A. I was, yes, correct.
7 Q. And how was CDK Global passing
8 sensitive data?
9 A. They weren't. They were fighting
10 the -- I believe Brnovich was maybe the
11 governor.
12 Q. Let's just spell it for the court
13 reporter?
14 A. Sure, you want to spell it?
15 Q. Sure B-R-N-O-V-I-C-H; is that
16 correct?
17 A. Yes.
18 Q. All right. How was Brnovich
19 passing sensitive data?
20 A. Yeah, I think you pronounced it
21 correctly.
22 Brnovich was pro passing
23 sensitive consumer -- Arizona consumer data to
24 third parties. He wanted to make it freely
25 available and to share it with third parties

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1 while CDK Global did not want to do that because
2 it introduced a ton of risks to consumers.
3 Q. How was Brnovich collecting
4 sensitive data?
5 A. He wasn't. I believe he was
6 either the governor or secretary of state; he
7 had an official political position within the
8 state. He wasn't collecting it. The car
9 dealerships in his states were.
10 Q. How were the car dealerships
11 within the state of Arizona collecting sensitive
12 data?
13 A. Well, I learned a lot in this
14 case. Believe it or not, from the moment you
15 visit a car dealer's website through visiting a
16 showroom to test driving a vehicle, to
17 purchasing a vehicle, dealerships collect a lot
18 of data on consumers. And they harvest that
19 data, and they were looking to share it freely
20 and without controls. And CDK -- CDK Global did
21 not want that to occur because of the various
22 risks that created.
23 Q. Was any part of that case in your
24 testimony related to the advertising ecosystem?
25 A. Yes.

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1 Q. What part of the case was
2 involving the advertising ecosystem?
3 A. Like I just said, through my work
4 on that case I studied and learned how these car
5 dealerships were collecting data and then using
6 that data to target consumers for the purposes
7 of sales.
8 Q. But how did that relate to the
9 advertising ecosystem?
10 A. Well, I learned about a lot of
11 the data that these dealerships were collecting
12 and how they were collecting it and where they
13 were collecting it.
14 Q. Were these car dealerships using
15 publisher ad servers to collect this data?
16 A. My -- the scope of my work there
17 was not to unpack that aspect of it, rather just
18 the data that they were collecting and how they
19 were collecting it.
20 Q. Is there any other time that
21 you've testified in court as an expert?
22 A. Not that I can recall.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

14 Q. Were any of these publications
15 that you authored in whole or in part peer
16 reviewed before publication?
17 A. Yeah, I'm sure. I mean, part of
18 our process is we peer review all of our work.
19 Q. Were any of them blind peer
20 reviewed?
21 A. No.
22 Q. Which articles in Appendix A were
23 peer reviewed before publication?
24 A. Again, I have to say -- I mean,
25 all of them should have been. It's part of our

1 practice on the team.
2 Q. Peer reviewed by who?
3 A. Members of our team.
4 Q. Within FTI Consulting?
5 A. Within FTI Consulting, yes. In
6 the first and most instances, yes. In some
7 instances, I may take it outside to an academic
8 or a colleague in the legal industry for peer
9 review or co-authorship.
10 Q. Which article listed in these
11 recent publications did you take to an outside
12 academic?
13 A. I couldn't answer that right now.
14 I'd have to go through them all. I'm happy to
15 do that.
16 Q. Which one of these recent
17 publications was peer reviewed by someone
18 outside of FTI Consulting?
19 A. Let me look. I mean, I'm not
20 really sure as I sit here. I can tell you some
21 of these pieces I would have most certainly
22 reached out to colleagues in the industry but
23 some I wouldn't have. So I don't know as I sit
24 here and look at the titles.
25 Q. What percentage of the

1 publications listed in this appendix were peer
2 reviewed by someone outside of FTI Consulting?
3 A. Say maybe ten, 20%.
4 Q. But you can't point to one
5 specific one that was peer reviewed by someone
6 outside of FTI Consulting?
7 A. I mean, I want to say maybe the
8 Hill piece, "US Presidential Election is Under
9 Attack."
10 Q. Who was that peer reviewed by?
11 A. I don't know specific names.
12 But, I mean, that's what I do every day, and
13 most of my friends are security people. And
14 maybe they don't work for FTI, but they work
15 either in the government or in the security
16 industry or in the security industry for the
17 government.
18 So, you know, I'm not really
19 secretive about my publications. I enjoy
20 writing and publishing. So if I have an
21 interesting piece in something like that, I
22 might have said -- sent it to someone and said
23 what do you think, am I crazy?
24 Q. Were any of these publications
25 published in journals that require the pieces to

1 be peer reviewed before publication?
2 A. So I can't answer that. I would
3 have to send you to our team that actually
4 facilitates that whole process. I don't know.
5 Q. You don't know whether any of
6 your publications were published in journals
7 that require peer review before publication?
8 A. What I said was I don't know if
9 any of the journals I published in require peer
10 review. I wouldn't be the person to ask that.
11 I write the piece, pass it to the team who then
12 gets it published.
13 Q. What journals have you published
14 in?
15 A. Everything is listed here. You
16 say "journal," I'm thinking in the traditional
17 sense like an academic journal or something. I
18 don't know if I've really event been published
19 in a journal. Like I said, everything is here.
20 Q. Have you ever been published in
21 an academic journal?
22 A. I don't know as I sit here. I
23 would have to go through all of these.
24 Q. As you sit here today, do you
25 recall being published in an academic journal?

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|---|---|
| <p>1 A. Again, I don't know. I've been</p> <p>2 writing for -- in this topic in the security</p> <p>3 industry for -- I mean, since I was 18. But in</p> <p>4 the last ten years, I don't know if any of these</p> <p>5 are academic journals. Here you go; New York</p> <p>6 Law Journal, holistic view, Insurance Journal.</p> <p>7 So those are two just based on the title.</p> <p>8 Q. Is the New York Law Journal an</p> <p>9 academic publication?</p> <p>10 A. I don't know. I was making that</p> <p>11 just based on New York Law Journal.</p> <p>12 Q. So is it fair to say you don't</p> <p>13 remember any academic publications that you</p> <p>14 authored as you sit here today; is that fair?</p> <p>15 A. I'm sorry, can you repeat the</p> <p>16 question?</p> <p>17 Q. Is it fair to say you don't</p> <p>18 remember any specific academic publications that</p> <p>19 you authored as you sit here today?</p> <p>20 A. I just said, you know, based on</p> <p>21 looking at these titles, I can't answer that</p> <p>22 question right now. I'd have to go through each</p> <p>23 of them. I mean, the New York Law Journal, I</p> <p>24 read that as New York Law School, maybe you read</p> <p>25 it as New York State or New York City. Again, I</p> | <p>1 sure malvertising has been referenced.</p> <p>2 Q. And which ones are you sure that</p> <p>3 they've been referenced?</p> <p>4 A. I don't know. I'd have to look</p> <p>5 at them.</p> <p>6 Q. How are you sure that they've</p> <p>7 been referenced?</p> <p>8 A. I mean, malvertising is a risk.</p> <p>9 It's been on the rise. It's -- it's been a risk</p> <p>10 to users over the years.</p> <p>11 Q. So is it your testimony today</p> <p>12 that the word "malvertising" appears in at least</p> <p>13 one of the publications listed?</p> <p>14 A. No, that's not my testimony, that</p> <p>15 the word "malvertising" exists in one of these.</p> <p>16 What I'm saying is malvertising</p> <p>17 is a threat; it's a risk. And in my recent</p> <p>18 publications, the 31 recent publications in the</p> <p>19 last ten years, I don't know what I've written</p> <p>20 in those. Is the concept of malvertising</p> <p>21 referenced either directly or indirectly? I'm</p> <p>22 saying it's very possible, but I don't know.</p> <p>23 Q. How many of these publications</p> <p>24 discuss header bidding?</p> <p>25 A. I don't know.</p> |
| Page 79 | Page 81 |
| <p>1 don't know. If we pull the piece, we can look</p> <p>2 at it and get clarification. I'm just not sure.</p> <p>3 Q. So that's a long way of saying</p> <p>4 you don't know of any academic publications that</p> <p>5 you've had as you sit here today?</p> <p>6 A. Yeah.</p> <p>7 Q. Of these publications that you've</p> <p>8 had, how many have been about malvertising?</p> <p>9 Just for spelling M-A-L-V-E-R-T-I-S-I-N-G; is</p> <p>10 that right?</p> <p>11 A. Oh, I'm sorry.</p> <p>12 Q. Malvertising, I'm just making</p> <p>13 sure we're spelling it correctly.</p> <p>14 A. Yeah, I'm sure you can spell it</p> <p>15 for the court reporter.</p> <p>16 You asked me a question about how</p> <p>17 many were focused on malvertising. I'd have to</p> <p>18 go through them to answer your question and then</p> <p>19 to answer your question clearly.</p> <p>20 Q. So, again, as you sit here today</p> <p>21 do you recall authoring any publication</p> <p>22 discussing malvertising?</p> <p>23 A. I mean, of the 31 pieces, as I</p> <p>24 sit here today, I can't say the substance of</p> <p>25 them outside -- outside their titles, but I'm</p> | <p>1 Q. Have you ever published personal</p> <p>2 research results from studies that you've</p> <p>3 conducted in this field?</p> <p>4 A. Personal?</p> <p>5 Q. Yeah.</p> <p>6 A. I don't know of -- anything I've</p> <p>7 published I have done -- I mean, personal and</p> <p>8 professional lives I feel like are so blurred</p> <p>9 these days. So anything I publish I've done</p> <p>10 either professionally or academically. And I</p> <p>11 don't believe I was published as an academic but</p> <p>12 conducted plenty of research.</p> <p>13 Q. What type of research have you</p> <p>14 conducted?</p> <p>15 A. Period?</p> <p>16 Q. I'm sorry?</p> <p>17 A. Is that your entire question?</p> <p>18 Q. You said you conducted plenty of</p> <p>19 research, rye?</p> <p>20 A. I mean, that's all I do is</p> <p>21 research. I told you started in this industry</p> <p>22 when I was ten years old. I'm cognizant that</p> <p>23 I'm talking to the Department of Justice. At</p> <p>24 ten years old I was hacking computers,</p> <p>25 ethically, of course. I continued -- I wrote my</p> |

| Page 82 | Page 84 |
|--|--|
| <p>1 first program at ten. I hacked my first program</p> <p>2 at ten. That's research. Business BASIC was</p> <p>3 the language I learned at ten years old, which</p> <p>4 then I then studied as an academic; HTML,</p> <p>5 JavaScript, Java, Perl, PHP. These are all</p> <p>6 computer languages that I researched, studied,</p> <p>7 wrote, compiled, decompiled, engineered, reverse</p> <p>8 engineered, networks that I've built. I mean,</p> <p>9 that's all I've done since the age of ten is</p> <p>10 research.</p> <p>11 So then did I take that research</p> <p>12 and publish on it? No, not as an official</p> <p>13 academic. Professionally, sure. I've taken</p> <p>14 research that I've done and written papers, all</p> <p>15 of which should be outlined here.</p> <p>16 Q. The first publication listed</p> <p>17 under this title is one titled "10 Cyber Risks</p> <p>18 and Realities We're Seeing This Year - And</p> <p>19 Beyond."</p> <p>20 Do you see that?</p> <p>21 A. I do see that.</p> <p>22 Q. And then you even have the date</p> <p>23 of February of 2023; is that right?</p> <p>24 A. Yes.</p> <p>25 Q. So about a year ago?</p> | <p>1 A. In this article?</p> <p>2 Q. No, just generally in your field?</p> <p>3 A. Oh, meaningful distinction</p> <p>4 between malvertising and ad fraud?</p> <p>5 Q. Correct.</p> <p>6 A. Yeah, of course.</p> <p>7 Q. What's the difference between?</p> <p>8 A. Ad fraud is the exploitation of</p> <p>9 the advertising process, while malvertising is</p> <p>10 using the ad ecosystem to target end users and</p> <p>11 try to exploit end users or devices.</p> <p>12 Q. Do you list ad fraud as one of</p> <p>13 the top ten cyber risk and realities of this</p> <p>14 year and beyond?</p> <p>15 A. I do not. Hold on, actually</p> <p>16 pause. I'd like to look at this more closely.</p> <p>17 (Witness reviews document.)</p> <p>18 So there are two references in</p> <p>19 here that you can attribute to the uptick in</p> <p>20 exploitation of the advertising ecosystem.</p> <p>21 Q. Okay, which two are those?</p> <p>22 A. The first one is "The government</p> <p>23 mandated orders examining cyber securities are</p> <p>24 increasing"; and then the second one is "Third</p> <p>25 party reliance will cause multiple data</p> |
| Page 83 | Page 85 |
| <p>1 A. Correct.</p> <p>2 Q. Did you list malvertising as one</p> <p>3 of the top ten cyber risks and realities of this</p> <p>4 year and beyond?</p> <p>5 A. I can't recall.</p> <p>6 MR. FREEMAN: We'll mark this as</p> <p>7 Ferrante litigation Exhibit 2.</p> <p>8 (Document marked for</p> <p>9 identification as Ferrante-Lit</p> <p>10 Deposition Exhibit No. 2.)</p> <p>11 BY MR. FREEMAN:</p> <p>12 Q. So just for identification, is</p> <p>13 this the article that you published that's</p> <p>14 referenced in Appendix A of your report here?</p> <p>15 A. Yes.</p> <p>16 Q. Let me know when you've had time</p> <p>17 to review it.</p> <p>18 A. (Witness reviews document.)</p> <p>19 Okay.</p> <p>20 Q. Do you list malvertising as one</p> <p>21 of the top ten cyber security risks and</p> <p>22 realities of this year and beyond?</p> <p>23 A. Based on the titles alone, no.</p> <p>24 Q. Do you make any meaningful</p> <p>25 distinction between malvertising and ad fraud?</p> | <p>1 breaches."</p> <p>2 Q. But you don't directly reference</p> <p>3 ad fraud in this article?</p> <p>4 A. It's a journal piece. I mean, I</p> <p>5 talk about the risks. I could write a book on</p> <p>6 each of these based on the work we're doing. So</p> <p>7 I think it's important when you're writing,</p> <p>8 what, may be a four or five-page piece to keep</p> <p>9 it interesting to talk about it at a high level.</p> <p>10 But those are two particular points that we see</p> <p>11 more and more at work every day, and the</p> <p>12 advertising ecosystem is absolutely involved.</p> <p>13 Q. But you don't address the</p> <p>14 advertising ecosystem explicitly in that</p> <p>15 article, do you?</p> <p>16 A. We don't use the words</p> <p>17 "advertising ecosystem," but we talk about</p> <p>18 third-party risk, and we talk about the</p> <p>19 government -- my term "government hammer" --</p> <p>20 that is being dropped on organizations that are</p> <p>21 not protecting user data.</p> <p>22 Q. Those also -- those risks occur</p> <p>23 outside of the advertising ecosystem as well,</p> <p>24 right?</p> <p>25 A. Of course they occur outside the</p> |

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|---|--|
| <p>1 advertising ecosystem. But in this particular</p> <p>2 paper, I'm talking about it specific to the work</p> <p>3 that we are doing currently at FTI Consulting</p> <p>4 relating to the advertising ecosystem.</p> <p>5 MR. FREEMAN: We've been going</p> <p>6 about an hour. This is a logical break.</p> <p>7 MS. MAUSER: Fine by me.</p> <p>8 MR. FREEMAN: We can go off the</p> <p>9 record.</p> <p>10 THE VIDEOGRAPHER: Off the record</p> <p>11 11:38. This ends media unit number two.</p> <p>12 (Brief recess.)</p> <p>13 THE VIDEOGRAPHER: On the record</p> <p>14 at 11:55. This begins media unit three</p> <p>15 in the deposition of Anthony Ferrante.</p> <p>16 BY MR. FREEMAN:</p> <p>17 Q. Just one point of clarification</p> <p>18 or question of clarification. We've been</p> <p>19 talking about advertising ecosystems. When</p> <p>20 you're using that phrase, you're talking about</p> <p>21 the online or digital advertising ecosystem,</p> <p>22 right?</p> <p>23 MS. MAUSER: Object to form.</p> <p>24 THE WITNESS: Correct. That's</p> <p>25 what this case is about, correct.</p> | <p>1 Google. In the third instance, while it started</p> <p>2 as a confidential matter, is now public. But</p> <p>3 that matter involves us, FTI Consulting,</p> <p>4 supporting Google in the takedown -- or the</p> <p>5 identification and the takedown of a bot net.</p> <p>6 Q. What was your role in the taking</p> <p>7 down of the bot net?</p> <p>8 A. So I am the global practice</p> <p>9 leader, so I have insights into all the cases we</p> <p>10 work around the globe. And so my role in that</p> <p>11 case was ensuring quality control, the right</p> <p>12 team was working on it, making sure that we were</p> <p>13 doing our part.</p> <p>14 Q. The two matters that you said</p> <p>15 were confidential, were they in relation to or</p> <p>16 involved litigation?</p> <p>17 A. I don't know. Can you be more</p> <p>18 clear when you say "litigation"? One of them</p> <p>19 was -- so I think not.</p> <p>20 Q. Were you still working on any of</p> <p>21 those matters when you were retained in this</p> <p>22 particular case?</p> <p>23 A. The three of them that we spoke</p> <p>24 about?</p> <p>25 Q. That's correct.</p> |
| Page 87 | Page 89 |
| <p>1 BY MR. FREEMAN:</p> <p>2 Q. I understand. I just want a</p> <p>3 point of -- we're not talking about advertising</p> <p>4 in print newspaper --</p> <p>5 A. No, I'm sorry.</p> <p>6 Q. -- or magazines or anything like</p> <p>7 that?</p> <p>8 A. No. Correct, online digital.</p> <p>9 Q. So then moving -- excuse me -- to</p> <p>10 this particular case, Google retained you for</p> <p>11 this case?</p> <p>12 A. Google did, yes.</p> <p>13 Q. Had you ever been retained by</p> <p>14 Google prior to this case?</p> <p>15 A. Yes.</p> <p>16 Q. How many times have you been</p> <p>17 retained by Google prior to this case?</p> <p>18 A. I believe the answer to that,</p> <p>19 prior to this case, is three times.</p> <p>20 Q. What were the subject matters</p> <p>21 that you were retained prior to this case?</p> <p>22 A. Yes. Prior to this case, the</p> <p>23 three retentions, as you can appreciate, two of</p> <p>24 them are confidential. They involve the need</p> <p>25 for outside independent experts to support</p> | <p>1 A. I mean, it's possible those</p> <p>2 matters were still open. I don't know if we</p> <p>3 were actively billing or conducting any type of</p> <p>4 work.</p> <p>5 Q. I don't want the substance, but</p> <p>6 who contacted you to be retained in this</p> <p>7 particular case?</p> <p>8 A. In this particular matter?</p> <p>9 Q. Yeah.</p> <p>10 A. The gentleman's name is William</p> <p>11 Isaacson.</p> <p>12 Q. Is it true, then, your hourly</p> <p>13 rate for this particular case is \$1,350 per</p> <p>14 hour?</p> <p>15 A. I believe that is correct. It's</p> <p>16 stated in my report.</p> <p>17 Q. How many hours have you worked on</p> <p>18 this case to date?</p> <p>19 A. You know, I'm not sure. Couldn't</p> <p>20 really say.</p> <p>21 Q. Well, is it more than a hundred</p> <p>22 hours?</p> <p>23 A. I'm not really sure. I can tell</p> <p>24 you that since retention I met regularly with my</p> <p>25 team. I meet weekly, if not more than once a</p> |

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1 week. I know the team engaged with counsel pretty regularly. So, I mean, if you go back to our original retention to present date and the tallying of the hours, I'm sure it's hundreds of hours.

Q. Had you worked with Mr. Isaacson on the other matters prior to this case?

A. No.

Q. Have you been paid at all by Google to date?

A. Paid?

Q. Yeah.

A. That's a really good question.

On this matter?

Q. Correct.

A. I don't know.

Q. When were you retained for this particular matter?

A. I don't recall the exact date, but I want to say it was this summer; June, July of 2023.

Q. So in preparing -- you ultimately wrote a report in this case, right?

A. That is correct.

Q. In preparing for this -- for that

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1 report that you authored, how many internal Google documents did you personally review?

A. I mean, they're definitely cited in the report. But everything cited I reviewed.

Q. Understood.

My question is: did you review any other internal Google documents that are not cited in the report?

A. I can't recall.

Q. Did you review any type of source code?

A. Source code?

Q. Yeah.

A. Yes.

Q. What source code did you review in preparation for your report?

A. Well, as part of our investigation as a technical expert, I mean that's what we do every day in these investigations, is we'll read and then do field testing. And so as part of our investigation here, there was source code involved, particularly JavaScript, and then server calls.

Q. Where did you review that source code?

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A. In the lab.

Q. At FTI Consulting?

A. Correct.

Q. You still have the report in front of you?

A. I do.

21 We very much like to, you know,
22 to use the term "peek under the hood" or "peek
23 behind the curtain" to actually see the guts of
24 what's happening because there's reading it in
25 an article, and then there's seeing it. And

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1 when it comes to looking at the TCIP
2 connections, the server calls, the JavaScript,
3 the HTML code, it's important to actually see it
4 so you can understand how it's working. So I
5 don't know if we would have listed it, but I
6 know we would have done it.

Q. Did your review of the source code for this particular case help you form your opinions in the report?

A. It verified our opinions.

Q. What type of things did the source code verify?

A. The existence of certain configurations, how things were written, where, examples, right, looking at the source code of CNN.com versus the New York Times.com. It's insightful.

Q. Did you look at any of the source code that's proprietary to Google?

A. Oh, no. We looked at only open source, what's available on the public internet.

Q. Did you ask to see any source code that was proprietary to Google?

A. No.

Q. Did you review any datasets as

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|---|---|
| <p style="text-align: right;">Page 94</p> <p>1 part of your preparation for this report?</p> <p>2 A. You have to be a little bit more</p> <p>3 clear.</p> <p>4 Q. Well, in Appendix B, that you</p> <p>5 referenced, of materials referenced and relied</p> <p>6 on, are there any things that you would specify</p> <p>7 as datasets that you relied on?</p> <p>8 A. Well, Appendix B in totality is a</p> <p>9 data set. I mean, I would almost say a lot of</p> <p>10 these items could be categorized as datasets.</p> <p>11 That's why I asked if you could be just more</p> <p>12 specific.</p> <p>13 Q. When we talk about source code,</p> <p>14 how would you define it?</p> <p>15 A. Source code?</p> <p>16 Q. Yeah.</p> <p>17 A. Actual code, programming</p> <p>18 languages codes, BASIC, HTML, JavaScript, Perl,</p> <p>19 PHP, C++, C, Python.</p> <p>20 Q. Did you conduct any surveys as</p> <p>21 part of your preparation for this report?</p> <p>22 A. A survey?</p> <p>23 Q. Yeah.</p> <p>24 A. Survey of whom?</p> <p>25 Q. Well, did you interview any</p> | <p style="text-align: right;">Page 96</p> <p>1 Q. What companies do you know that</p> <p>2 have advertising ad networks?</p> <p>3 A. I mean, I have a list of all of</p> <p>4 these. I'm just trying to bucket them. So as I</p> <p>5 sit here right now -- trying to think. I mean,</p> <p>6 there are lots of players in this space; Adobe,</p> <p>7 PubMatic, OpenX. I think I said that.</p> <p>8 Q. Any others you can think of?</p> <p>9 A. Yeah, I can't -- as I sit here</p> <p>10 right now, I can't think of them.</p> <p>11 Q. What's a demand-side platform?</p> <p>12 A. Demand-side platform, that is the</p> <p>13 function of inventorying the various -- let's</p> <p>14 call them publishers that demand the actual ad</p> <p>15 space.</p> <p>16 Q. What is an advertising ad</p> <p>17 network?</p> <p>18 A. Ad network is the match maker,</p> <p>19 the demand for supply, in simple terms.</p> <p>20 Q. Does Google have a demand-side</p> <p>21 platform product?</p> <p>22 A. Google has AdX, AdSense, Google</p> <p>23 Ad Manager.</p> <p>24 Q. Are any of those would you</p> <p>25 classify as demand-side platforms?</p> |
| <p style="text-align: right;">Page 95</p> <p>1 publishers as part of your preparation for this</p> <p>2 report?</p> <p>3 A. No.</p> <p>4 Q. Did you interview any companies</p> <p>5 that have publisher ad servers as part of</p> <p>6 preparation for your report?</p> <p>7 A. Not that I recall.</p> <p>8 Q. Did you interview any companies</p> <p>9 that have ad exchanges as part of preparation</p> <p>10 for your report?</p> <p>11 A. Can you repeat that last</p> <p>12 question?</p> <p>13 Q. Sure. Well, let's start with</p> <p>14 this.</p> <p>15 What companies are you aware of</p> <p>16 that have ad exchanges?</p> <p>17 A. I mean, some of the big players,</p> <p>18 of course Google, PubMatic.</p> <p>19 Q. Do you know of any other</p> <p>20 companies that have --</p> <p>21 A. OpenX, Amazon, Prebid.</p> <p>22 Q. What companies are you aware of</p> <p>23 that have publisher ad servers?</p> <p>24 A. Yeah, I can't -- as I sit here</p> <p>25 right now.</p> | <p style="text-align: right;">Page 97</p> <p>1 A. I think so.</p> <p>2 Q. Which ones would you clarify as</p> <p>3 demand-side platforms?</p> <p>4 A. The manager.</p> <p>5 Q. Does Google have an advertising</p> <p>6 ad network?</p> <p>7 A. Yes.</p> <p>8 Q. What's the name of that?</p> <p>9 A. Google Ad Manager?</p> <p>10 Q. Do you know any other companies</p> <p>11 that have a demand-side platform?</p> <p>12 A. Not off the top of my head.</p> <p>13 Q. Do you know any other company</p> <p>14 that have advertising ad network?</p> <p>15 A. Advertising ad network?</p> <p>16 Q. Yeah.</p> <p>17 A. Again, back to the previous</p> <p>18 question, not off the top of my head.</p> <p>19 Q. So back to when I talked about</p> <p>20 surveys, did you interview anyone who worked for</p> <p>21 PubMatic in preparation for your report?</p> <p>22 A. No.</p> <p>23 Q. Did you review any deposition</p> <p>24 transcripts from someone who worked at PubMatic?</p> <p>25 A. Not that I recall.</p> |

| Page 98 | Page 100 |
|--|---|
| <p>1 Q. Did you interview anyone who</p> <p>2 worked with OpenX in preparation of your report?</p> <p>3 A. Not that I recall.</p> <p>4 Q. Did you review any deposition</p> <p>5 transcript of anyone that worked at OpenX in</p> <p>6 preparation of your report?</p> <p>7 A. Not that I recall.</p> <p>8 Q. Did you interview anyone who</p> <p>9 worked with Amazon in preparation for your</p> <p>10 report?</p> <p>11 A. No, not that I recall.</p> <p>12 Q. Did you review any deposition</p> <p>13 transcript of anyone that worked at Amazon in</p> <p>14 preparation of your report?</p> <p>15 A. I'm sorry, could you ask that</p> <p>16 again?</p> <p>17 Q. Sure.</p> <p>18 Did you review any deposition</p> <p>19 transcript of anyone that worked at Amazon in</p> <p>20 preparation of your report?</p> <p>21 A. Not that I recall.</p> <p>22 Q. Did you interview anyone who</p> <p>23 worked at Google in preparation of your report?</p> <p>24 A. Interview anyone at Google --</p> <p>25 Q. Just for clarification, I don't</p> | <p>1 Q. How many public Google documents</p> <p>2 did you personally review in preparation of your</p> <p>3 report?</p> <p>4 A. I mean, I couldn't put a number</p> <p>5 on it. I know I have a lot cited in my report.</p> <p>6 Q. Did you review any other</p> <p>7 public -- Google public documents that is not</p> <p>8 cited in your Appendix B?</p> <p>9 A. I mean, that's just such a broad</p> <p>10 question. I want to say I'm sure I did.</p> <p>11 There's a lot of documents; there are a lot of</p> <p>12 Google documents out there. And if it wasn't</p> <p>13 referenced in my report, then I certainly didn't</p> <p>14 reference it in the report or rely on it.</p> <p>15 Q. Of the Google documents that</p> <p>16 contained hyperlinks, did you ask to get the</p> <p>17 underlying document that was hyperlinked?</p> <p>18 A. If I needed it or if I thought I</p> <p>19 did, if I thought -- then I wouldn't have been</p> <p>20 shy to ask. I can't recall as I sit here if I</p> <p>21 did or did not.</p> <p>22 MS. MAUSER: I can represent that</p> <p>23 we did not provide Mr. Ferrante any</p> <p>24 hyperlink to any document. He only had</p> <p>25 access to things as they were produced</p> |
| Page 99 | Page 101 |
| <p>1 want any communication with lawyers.</p> <p>2 A. Yes, no, I understand that.</p> <p>3 Q. Okay.</p> <p>4 A. Not that I recall.</p> <p>5 Q. Did you interview anyone who was</p> <p>6 a former Google employee in preparation of your</p> <p>7 report?</p> <p>8 A. No, I did not.</p> <p>9 Q. Did you review the deposition</p> <p>10 transcript of anyone who worked at Google in</p> <p>11 preparation of your report?</p> <p>12 A. Not that I can recall.</p> <p>13 Q. Did you review the deposition</p> <p>14 transcript of any person who formerly worked at</p> <p>15 Google in preparation of your report?</p> <p>16 A. Not that I recall.</p> <p>17 Q. Of the Google documents that you</p> <p>18 did review, did any of them have hyperlinks</p> <p>19 contained within them?</p> <p>20 A. I believe so, yes.</p> <p>21 Q. Did you review those hyperlink</p> <p>22 documents?</p> <p>23 A. No, I did not, outside of reading</p> <p>24 the actual hyperlink itself, I was unable to</p> <p>25 click on those links.</p> | <p>1 to you.</p> <p>2 MR. FREEMAN: Thank you.</p> <p>3 BY MR. FREEMAN:</p> <p>4 Q. Did you review any documents from</p> <p>5 PubMatic?</p> <p>6 A. If it's not listed in my report</p> <p>7 as referenced or relied upon material then, no.</p> <p>8 Q. Did you review any internal</p> <p>9 documents from OpenX?</p> <p>10 A. Internal documents from OpenX?</p> <p>11 Q. Yeah.</p> <p>12 A. Not that I recall.</p> <p>13 Q. Did you review any internal</p> <p>14 documents from Amazon?</p> <p>15 A. No, not that I recall.</p> <p>16 Q. Did you review any internal</p> <p>17 documents from any company other than Google?</p> <p>18 A. Okay, can you reask that</p> <p>19 question, please?</p> <p>20 Q. Sure.</p> <p>21 Did you review any internal</p> <p>22 documents from any other company other than</p> <p>23 Google?</p> <p>24 A. Okay, so I just want to make sure</p> <p>25 I understood you correctly.</p> |

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|---|---|
| <p>1 Internal documents, no.</p> <p>2 Q. Did you ask to see internal</p> <p>3 documents of any other company?</p> <p>4 A. No.</p> <p>5 Q. Are you familiar -- excuse me.</p> <p>6 Are you familiar with a company,</p> <p>7 Criteo, and I'll spell it. C-R-I-T-E-O?</p> <p>8 A. Can you give me -- is it</p> <p>9 referenced in my report?</p> <p>10 Q. Not necessarily. I'm just asking</p> <p>11 if you are familiar with that company being in</p> <p>12 the field?</p> <p>13 A. It sounds familiar and that's why</p> <p>14 I'm wondering where you read it.</p> <p>15 Q. Do you know what type of products</p> <p>16 or platforms they have in the online advertising</p> <p>17 ecosystem?</p> <p>18 A. Who's "they"?</p> <p>19 Q. Criteo?</p> <p>20 A. I mean, there are thousands of</p> <p>21 providers out there. You are going to have to</p> <p>22 give me a little bit more than that. Is it in</p> <p>23 my report? Let's start there.</p> <p>24 Q. Are you familiar with a company,</p> <p>25 The Trade Desk?</p> | <p>1 A. Yes, Xandr, I believe, is -- it's</p> <p>2 a player in the space, either an exchange or a</p> <p>3 network.</p> <p>4 Q. Do you know what products or</p> <p>5 platforms they offer in the digital online -- or</p> <p>6 digital advertising ecosystem?</p> <p>7 A. Like I just said, an exchange or</p> <p>8 a network.</p> <p>9 Q. Did you interview any advertisers</p> <p>10 in preparation of your report?</p> <p>11 A. No.</p> <p>12 Q. Did you interview any advertising</p> <p>13 agencies in preparation of your report?</p> <p>14 A. No.</p> <p>15 Q. How many internal Google</p> <p>16 documents did you review that discussed header</p> <p>17 bidding?</p> <p>18 A. I can't recall as I sit here. I</p> <p>19 would say that if I relied on them, they're most</p> <p>20 certainly referenced in my report.</p> <p>21 Q. Did you rely on any other</p> <p>22 internal -- strike that.</p> <p>23 Did you review any other internal</p> <p>24 Google document that is not referenced in</p> <p>25 Appendix B of your report?</p> |
| Page 103 | Page 105 |
| <p>1 A. I've heard of the company, The</p> <p>2 Trade Desk.</p> <p>3 Q. What product or platforms does</p> <p>4 The Trade Desk offer in the online advertising</p> <p>5 ecosystem?</p> <p>6 A. Again, as I sit here right now, I</p> <p>7 can't answer that. I'd have to familiarize</p> <p>8 myself with it.</p> <p>9 Q. Are you familiar with a company</p> <p>10 called Magnite? I'll spell it again.</p> <p>11 M-A-G-N-I-T-E.</p> <p>12 A. I can't recall.</p> <p>13 Q. Do you know what products or</p> <p>14 platforms they offer in the digital advertising</p> <p>15 ecosystem?</p> <p>16 A. With respect to Magnite, no.</p> <p>17 Q. Are you familiar with a company</p> <p>18 by the name Index Exchange?</p> <p>19 A. I have heard of Index Exchange.</p> <p>20 Q. What product or platforms do they</p> <p>21 offer in the online advertising ecosystem?</p> <p>22 A. As I sit right here, I couldn't</p> <p>23 say.</p> <p>24 Q. Are you familiar with the company</p> <p>25 Xandr, spelled X-A-N-D-R?</p> | <p>1 A. I'm sorry, can you repeat that?</p> <p>2 Q. Did you review any other internal</p> <p>3 Google document that is not referenced in</p> <p>4 Appendix B of your report?</p> <p>5 A. Not that I recall.</p> <p>6 Q. How many public Google documents</p> <p>7 did you review that discussed header bidding?</p> <p>8 A. And when you say "Google</p> <p>9 documents," you mean official Google-stamped</p> <p>10 publications?</p> <p>11 Q. What I mean by that is someone</p> <p>12 who works for Google is the author of the</p> <p>13 particular report or article?</p> <p>14 A. And it would sit on the Google</p> <p>15 domain, or it's just a Google professional</p> <p>16 publishing on header bidding?</p> <p>17 Q. The former, meaning how many</p> <p>18 public Google documents did you review that were</p> <p>19 on an owned and operated Google website?</p> <p>20 A. Yeah, so thank you for that</p> <p>21 clarification.</p> <p>22 As I sit here, I cannot</p> <p>23 definitively say.</p> <p>24 Q. Was it more than 100?</p> <p>25 A. No.</p> |

1 made it through the network that were not
 2 blocked?
 3 Q. That's correct.
 4 A. I can't answer that.
 5 Q. Why can't you answer that?
 6 A. You're asking me how many ads
 7 went through the Google network? I want to make
 8 sure we're speaking the same language here.
 9 You're asking me how many ads went through the
 10 Google network that were not blocked?
 11 Q. That should have been.
 12 A. That should have been. So how
 13 many ads went through the Google network, Google
 14 is telling us how many were blocked, but I'm --
 15 you're asking me if I know how many that Google
 16 didn't blocked that should have been blocked?
 17 Q. That's right.
 18 A. I can't answer that question.
 19 Q. Why can't you answer that
 20 question?
 21 A. I'm confused. You're asking me
 22 how many ads go through the Google network.
 23 Google has technologies and policies in place to
 24 block ads, and you're asking me how many ads did
 25 not get blocked by their technologies and

1 policies, yet still made it through the ad
 2 network?
 3 Q. Correct.
 4 A. I can't answer that.
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 12 Q. During the same time from 2020 to
 13 2022 and using the same definition, how many ads
 14 were blocked or restricted for abusing the
 15 network by Amazon?
 16 A. I can't answer that question.
 17 Q. Why can't you answer that
 18 question?
 19 A. Actually, yeah, let me rephrase
 20 my answer.
 21 I can't recall.
 22 Q. During this same time period,
 23 2020 to 2022, and using the same definition, how
 24 many ads were blocked or restricted for abusing
 25 the network by PubMatic?

1 A. I can't recall.
 2 Q. During the same timeframe and
 3 using the same definition, how many ads were
 4 blocked or restricted for abusing the network by
 5 OpenX?
 6 A. I just want to be clear, you keep
 7 saying "the same definition." Are we using
 8 Google's definition?
 9 Q. Using Google's definition.
 10 A. Using Google's definition
 11 PubMatic -- you're asking me how many
 12 advertisements PubMatic blocked based on
 13 Google's definition. Wouldn't we use PubMatic's
 14 definition?
 15 Q. Sure. Do you know that answer?
 16 How many -- during 2020 to 2022,
 17 how many ads were blocked or restricted for
 18 abusing the network by PubMatic using PubMatic's
 19 definition?
 20 A. I can't recall.
 21 Q. You can't recall or you didn't
 22 see it?
 23 A. I can't recall if I saw it.
 24 Q. During the same timeframe, how
 25 many ads were blocked or restricted for abusing

1 the network by Amazon?
 2 A. I can't recall if I saw that.
 3 Q. How many ads were blocked or
 4 restricted during this timeframe for abusing the
 5 network by Criteo?
 6 A. I can't recall if I saw that.
 7 Q. How many ads were blocked or
 8 restricted by abusing the network by The Trade
 9 Desk?
 10 A. I can't recall if I saw that.
 11 Q. How many ads were blocked or
 12 restricted for abusing the network by Index
 13 Exchange?
 14 A. I can't recall if I saw that.
 15 Q. How many ads were blocked or
 16 restricted for abusing the network by Xandr?
 17 A. I can't recall if I saw that.
 18 Q. How many ads were blocked or
 19 restricted for abusing the network by Magnite?
 20 A. I can't recall if I saw that.
 21 Q. How many ads were blocked or
 22 restricted for abusing the network by Meta?
 23 A. I can't recall if I saw that.
 24 Q. Did you try to search for
 25 information that would have given answers about

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|---|--|
| <p>1 how many ads were blocked or restricted by any</p> <p>2 of those companies?</p> <p>3 A. I'm sure I did. I'm sure I</p> <p>4 looked for it.</p> <p>5 Q. So is it fair to say that the</p> <p>6 numbers listed or the graph in Figure I, you</p> <p>7 don't know how those numbers compare to other</p> <p>8 companies within the digital advertising</p> <p>9 ecosystem; is that right?</p> <p>10 A. No.</p> <p>11 Q. No, that's not right?</p> <p>12 A. I don't agree with your</p> <p>13 statement.</p> <p>14 Q. How does the amount that Google</p> <p>15 blocked or restricted of ads in 2020 to 2022,</p> <p>16 how does that compare to the amount of ads that</p> <p>17 were blocked or restricted by any other company</p> <p>18 in the digital advertising ecosystem?</p> <p>19 A. How does it compare?</p> <p>20 Q. Yeah.</p> <p>21 A. I mean, it depends how you look</p> <p>22 at the data, how you unpack the data.</p> <p>23 Q. Can you testify today that Google</p> <p>24 blocked the most ads for abusing the network</p> <p>25 during 2020 to 2022?</p> | <p>1 Figure I compared to any other company in the</p> <p>2 market?</p> <p>3 A. We did look at numbers, but you</p> <p>4 have to appreciate numbers are numbers. The</p> <p>5 question is: is how are those numbers derived,</p> <p>6 the definitions of what gets you those numbers.</p> <p>7 Policies are written in a way</p> <p>8 that they're interpreted by each organization.</p> <p>9 And so what Google may view as abusing the ad</p> <p>10 network, as they've titled this graph, those</p> <p>11 other companies may not use the same exact</p> <p>12 definition. And so therefore, their numbers may</p> <p>13 be different.</p> <p>14 And so in the interest of</p> <p>15 verifying information and being clear and not</p> <p>16 seeing a source, a verified source of truth with</p> <p>17 consistent data and definitions, I didn't</p> <p>18 include it in the report.</p> <p>19 Q. Did you look for Amazon's</p> <p>20 published information about how many ads they</p> <p>21 blocked in any particular year?</p> <p>22 A. Of course. But back to my point,</p> <p>23 different organizations are going to create</p> <p>24 their policies and then enforce their policies</p> <p>25 different. And having worked extensively in</p> |
| Page 123 | Page 125 |
| <p>1 A. Can I testify today, as I sit</p> <p>2 here right now, that they blocked the most? No,</p> <p>3 I can't testify to that because I don't know if</p> <p>4 that's true.</p> <p>5 Q. All right. So back to my</p> <p>6 question, though, which is: would you agree that</p> <p>7 you do not know how Google's numbers from 2020</p> <p>8 to 2022 about blocking ads that were abusing the</p> <p>9 network, how that compares to any other company?</p> <p>10 A. No, I'm not saying that. I'm</p> <p>11 saying -- what I'm saying is that there's no</p> <p>12 single truth to this data. There's a lot of</p> <p>13 data out there about blocking ads. And a lot of</p> <p>14 that data, from what I gathered, is some of it</p> <p>15 is self reported, some of it is looked at in</p> <p>16 different chunks, different time frames. So to</p> <p>17 have an authority that states very clearly the</p> <p>18 question that you're asking, it's just not that</p> <p>19 clear. It's very, very gray.</p> <p>20 And so in my report I cite</p> <p>21 Google's material alone because Google is my</p> <p>22 client, and this was publicly available on their</p> <p>23 website, and I thought it relevant to this case.</p> <p>24 Q. Did you do any sort of</p> <p>25 comparative analysis of how these numbers in</p> | <p>1 this industry and worked extensively for big</p> <p>2 tech, I assure you that they all have different</p> <p>3 Rosetta Stones in which they decipher this for a</p> <p>4 reason.</p> <p>5 Q. Are you testifying that Figure I</p> <p>6 and the underlying data to support it, it's</p> <p>7 impossible to compare that to other companies?</p> <p>8 A. There's one thing I've learned in</p> <p>9 my profession, there are no definitives. What</p> <p>10 I'm saying is that it's very gray. And in the</p> <p>11 interest of clarity in my report, I wasn't able</p> <p>12 to find something that I thought fairly</p> <p>13 evaluated them.</p> <p>14 And, again, couple that with my</p> <p>15 experience in the industry, the last seven years</p> <p>16 I've worked extensively in big tech, their</p> <p>17 policies are different, they view data</p> <p>18 differently, they categorize data differently,</p> <p>19 and the numbers mean different things.</p> <p>20 MR. FREEMAN: This is a good</p> <p>21 breaking point. I don't know if you</p> <p>22 want -- it's almost 1:00 for lunch.</p> <p>23 MS. MAUSER: That's fine by me.</p> <p>24 THE VIDEOGRAPHER: Off the record</p> <p>25 12:50. This ends media unit three.</p> |

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1 (Luncheon recess.)
 2 THE VIDEOGRAPHER: On the record
 3 at 1:33. This begins media unit four in
 4 the deposition of Anthony Ferrante.
 5 BY MR. FREEMAN:

13 Q. What is the definition of adult
 14 content ad?

15 A. I'm not sure. I would reference
 16 the Google material citing the various policies
 17 and their definitions.

18 Q. How does Google determine whether
 19 a particular ad fell into this category of
 20 "adult content"?

21 A. Consistent with the same -- the
 22 subcategory abusing the ad network, they have a
 23 policy that's written. And when they believe --
 24 they have a policy written that defines adult
 25 content. And when they believe an ad that fits

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1 or violates that policy, is attempted to be
 2 shown, they flag it.

3 Q. Is that a manual process?

4 A. You know, I'm not sure. I'm sure
 5 there are technologies in place, just given the
 6 volume that I would expect.

7 Q. Did you review any of their
 8 source code for any of their automated filters?

9 A. No, I did not.

10 Q. Did you review any of the
 11 underlying data supports Figure J in Appendix C?

12 A. No, I did not.

13 Q. How did you confirm the
 14 accuracies of those particular numbers?

15 A. How did I confirm the accuracy of
 16 these numbers?

17 Q. Yeah.

18 A. I didn't.

19 Q. Back to similar questions that I
 20 asked you about the abusing the ad network of
 21 how many ads made it through Google's platforms
 22 that were shown that should have been blocked or
 23 restricted?

24 A. Are you speaking in general?

25 Q. During this particular timeframe.

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1 So let's be clear, right, Figure J is from the
 2 timeframe of 2020 to 2022?

3 A. Correct.

18 Q. All right. So my question is:
 19 during this timeframe of 2020 to 2022, did you
 20 see any information that would show how many
 21 adult content ads were shown through -- that
 22 went through Google's platforms?

23 A. Adult content ads that were shown
 24 through Google's advertising platform? Are
 25 these adult content ads that violated their

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1 policy?

2 Q. That's right.

3 A. Again, no, to consistent with my
 4 answer to the last subcategory on abusing the ad
 5 network, I don't have the data or the means to
 6 even --

7 Q. Did you look for the data that
 8 would support how effective their filters were
 9 in filtering out the adult content ads?

10 A. Did I look at Google's filters?

11 Q. Not necessarily the filters
 12 itself.

13 Did you look for any data that
 14 would indicate how many adult content ads went
 15 through their platforms but were not blocked?

16 A. So you're asking me Google has
 17 filters -- Google has technologies and policies
 18 in place to flag what they deem policy
 19 violations? And in this case we're speaking
 20 about adult content. You're asking me how many
 21 ads were not blocked or removed yet they should
 22 have been?

23 Q. That's right.

24 A. I can't answer that.

25 Q. Why can't you answer it?

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1 A. I don't have the data.
 2 Q. Did you look for the data?
 3 A. I'm not even sure that question
 4 -- I'm not even sure -- I'm not even sure if
 5 that question can be answered. What you're
 6 asking is attempts, malicious activity attempts
 7 at an organization that are engineered in a way
 8 that bypass controls and make it through. So
 9 you're asking me to quantify bad ads that were
 10 not deemed bad ads by existing policies and
 11 technologies in the first instance?
 12 Q. Correct.
 13 A. I can't answer that.
 14 Q. Do you know whether Google tried
 15 to analyze how effective their filters were in
 16 filtering out adult content ads?
 17 A. Do I know?
 18 Q. Yeah, do you know?
 19 A. I do not know.
 20 Q. During this same time period of
 21 2020 to 2022, how many ads were blocked or
 22 restricted for adult content by Amazon?
 23 A. I can't recall.
 24 Q. Are you saying you had that
 25 information at one point in time?

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1 A. I can't recall as I sit here
 2 right now. I'm sure I saw -- again, I saw lots
 3 of data related to other players in this space.
 4 Q. Then how did the data that you
 5 saw from other companies compare to Figure J?
 6 A. I can't recall.
 7 Q. Did you look at how many ads were
 8 blocked or restricted by Meta that were adult
 9 content?
 10 A. I can't recall specifically.
 11 Q. Do you know how many ads were
 12 blocked or restricted for being adult content by
 13 Criteo?
 14 A. Again, I cannot recall
 15 specifically.
 16 Q. During the same timeframe, do you
 17 know how many ads were blocked or restricted for
 18 being adult content by The Trade Desk?
 19 A. I cannot recall specifically.
 20 Q. Do you know how many ads were
 21 blocked or restricted for being adult content by
 22 OpenX?
 23 A. I cannot recall.
 24 Q. Do you know how many ads were
 25 blocked or restricted for being adult content

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1 during this timeframe by Magnite?
 2 A. I cannot recall.
 3 Q. Do you know how many ads were
 4 blocked or restricted for being adult content
 5 during this timeframe by PubMatic?
 6 A. I cannot recall.
 7 Q. Do you know how many ads were
 8 blocked or restricted for being adult content
 9 during this timeframe by Index Exchange?
 10 A. I cannot recall.
 11 Q. Do you know how many ads were
 12 blocked or restricted for being adult content
 13 during this timeframe by Xandr?
 14 A. I cannot recall.
 15 Q. So then is it fair to say that
 16 you don't know how Google's numbers compared to
 17 other companies with blocking or restricting ads
 18 that were adult content, right?
 19 A. Based on the information
 20 available to me and through the course of my
 21 investigation, I was not able to do that equal
 22 comparison. As I stated last time, this data is
 23 not consistent across platforms. And the way
 24 that these organizations interpret that data or
 25 set these policies and how they enforce these

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1 policies, it varies.
 2 As I said before, my experience
 3 is different tech companies view this data
 4 differently.
 5 Q. Again, that you are not able to
 6 make that comparison, or you just chose not to
 7 make that comparison?
 8 A. I looked for data.
 9 Q. But you don't know what that --
 10 as you sit here today, what that data showed?
 11 A. That data -- there was no -- that
 12 I can recall, and I would have put it in my
 13 report, there was no clear, verifiable source
 14 that evaluated this type of data in a way that I
 15 believed was understandable and I could speak to
 16 as an expert in the industry.
 17 Q. Does a company like Amazon also
 18 have policies and procedures of what type of
 19 content is permitted in their ads?
 20 A. I'd have to imagine, yes.
 21 Q. Have you reviewed those policies?
 22 A. What is publicly available.
 23 Q. Did you do any sort of comparison
 24 of how Amazon's policies and procedures related
 25 to content of ads compared to that of Google's?

1 A. Is there a specific content you
2 want to high -- you want to speak about?

3 Q. Sure.
4 Did you compare the policies and
5 procedures for adult content on Amazon and
6 compared that to the definition by Google?

7 A. Again, what is publicly available
8 is what I looked at.

9 Q. I'm saying did you compare
10 publicly available information about Amazon's
11 policies compared to Google's policies as it
12 relates to adult content in ads?

13 A. I read both Google and Amazon and
14 others' policies that were publicly documented
15 on the web.

16 Q. How does Amazon's policies
17 related to adult content differ from that of
18 Google's?

19 A. I can tell you that what is
20 publicly available on the web is very high
21 level.

22 Q. How does Amazon's policies
23 related to adult content differ from that of
24 Google's?

25 A. I mean, as I sit here right now,

1 I can't tell you the comparison.

2 Q. How does Criteo's related to
3 adult content differ from that of Google's?

4 A. As I sit here right now, I can't
5 articulate that.

6 Q. What about The Trade Desk, how
7 does The Trade Desk policies related to adult
8 content differ from that of Google's?

9 A. As I sit here right now, I can't
10 articulate that.

11 Q. How does OpenX's policies related
12 to adult content differ from that of Google's?

13 A. As I sit here right now, I cannot
14 articulate that.

15 Q. How does Magnite's policies
16 related to adult content differ from that of
17 Google's?

18 A. As I sit here right now, I cannot
19 articulate that.

20 Q. How does PubMatic's policies
21 related to adult content differ from that of
22 Google's?

23 A. As I sit here right now, I cannot
24 articulate that.

25 Q. How does the Index Exchange

1 policies differ from adult content that of
2 Google's?

3 A. As I sit here right now, I cannot
4 articulate that.

5 Q. How does Xandr's policies related
6 to adult content differ from that of Google's?

7 A. As I sit here right now, I cannot
8 articulate that.

9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]

14 Q. What type of ad is incorporated
15 in inappropriate content?

16 A. What type of ad?

17 Q. I'll phrase it slightly
18 different.

19 What type of ad violates Google's
20 policies as it relates to inappropriate content?

21 A. An ad that Google, their
22 technologies and their -- I'll call them
23 investigators -- believe violate their policy.

24 Q. That's what I'm asking. What is
25 Google's definition of inappropriate content?

1 A. I don't have it off the top of my
2 head.

3 Q. Did you review the underlying
4 data that supports Figure K?

5 A. I did not.

6 Q. What did you do to confirm the
7 accuracy of the numbers that are depicted in
8 Figure K?

9 A. I didn't think I needed to.

10 Q. Why didn't you think you needed
11 to?

12 A. Because it's publicly available
13 content on Google's site.

14 Q. Isn't it possible that publicly
15 available content is inaccurate?

16 A. Of course it is.

17 Q. So why would you feel -- why
18 would you not feel the need to verify whether
19 publicly available data is correct?

20 A. I'm not sure what your question
21 is.

22 Q. You said you didn't feel a need
23 to verify whether the publicly available data
24 was correct; am I right with that?

25 A. That is correct.

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1 Q. My question is: why didn't you
2 feel a need to verify the publicly available
3 data that Google had?

4 A. I reviewed a lot of material
5 throughout the course of this investigation. In
6 addition to me, I led a team of investigators
7 who did the same.

8 When it came to published
9 statistics and material on the Google.com
10 domain, while of course we looked at it and
11 questioned it, going back to my client and
12 verifying it, I did not think was a good use of
13 our time.

14 Q. How did you question it?

15 A. Reading it in its totality,
16 understanding the data presented with it,
17 reading the various support documents included
18 with it.

19 Q. You said "understanding the data
20 that was presented with it."

21 What data was presented with this
22 information as indicated in any of the charts in
23 Appendix C?

24 A. Well, this data is pulled from
25 Google support documents as they document how

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1 they do certain things, conduct certain
2 operations within Google. And in my experiences
3 working with a lot of big tech companies, of
4 course I read -- I didn't just look at a chart.
5 I looked at the surrounding documents. I looked
6 at what was publicly available, how they defined
7 certain things. Of course they gave examples.
8 They talk about the work that they put into it.
9 And so when you said how did I question it? I
10 questioned it to see if it was consistent with
11 my other clients and how they view this stuff.

12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]

18 Q. Are you aware of any time where
19 Google had to correct or amend a public document
20 for being inaccurate?

21 A. Google, the company?

22 Q. Yeah.

23 A. I'm sure that's happened.

24 Q. So then why would you take the
25 numbers as reported in Google's ad safety

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1 reports for these years as truth?

2 A. Because I think in totality,
3 given the scope of my work, the fact of the
4 matter is that Google is making efforts in this
5 space. They're talking about their policies.
6 They're talking about -- they're being
7 transparent with their statistics. Whether or
8 not this data was a hundred percent accurate or
9 needed a correction as you pointed out doesn't
10 change my views and my findings.

11 Google is an innovator. They're
12 a leader, and they're setting examples for the
13 industry. I read their policy documents; they
14 were consistent with my work in this space, and
15 I moved on.

16 Q. Are those the policy documents
17 that you can't recall what the subject matter is
18 as you sit here today?

19 MS. MAUSER: Object to the form.
20 Mischaracterizes testimony.

21 THE WITNESS: Excuse me?

22 BY MR. FREEMAN:

23 Q. You said that you relied on
24 policy documents to support the graphs in
25 Appendix C, right?

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1 A. Mm-hmm.

2 Q. What policy documents?

3 A. I forget the name of the title.

4 Q. What was the substance of the
5 policy documents?

6 A. It aligned what -- you know,
7 they're publicly available definitions of what
8 each subcategory is, talks about the work they
9 do to flag this content and take it down. I
10 forget the exact title, but it's in my report.
11 I'm sure it's referenced. Ad Safety Report.

12 Q. Does the Ad Safety Report define
13 the term "adult content"?

14 A. Define the term "adult content"?
15 It describes it. I wouldn't necessarily suggest
16 that it defines it to the exact extent that the
17 legal definition might suggest or might want it
18 to be. I would say that it has language
19 publicly available in their document to give the
20 reader a better understanding of it.

21 Q. What is contained in the Ad
22 Safety Reports that give you an understanding of
23 what type of ads qualify as adult content?

24 MS. MAUSER: Object to form.
25 THE WITNESS: Can you show me the

1 Ad Safety Report, and we can walk
2 through it?
3 BY MR. FREEMAN:
4 Q. I'm asking do you remember
5 anything within the Ad Safety Report?
6 A. You're asking me if I remember it
7 off the top of my head?
8 Q. That's correct.
9 A. I'd be happy to discuss the Ad
10 Safety Report with you in the publicly available
11 definitions of the subcategories if you present
12 it to me.
13 If you're asking me if I've
14 memorized the Ad Safety Report, I'm going to
15 tell you that I have not.
16 Q. I'm asking if you know, sitting
17 here today, whether you know how Google defines
18 "adult content"?
19 A. I've answered that question.
20 Q. I don't think you have, sir.
21 A. Okay.
22 Q. Do you remember --
23 A. We can agree to disagree. I
24 believe I've answered the question.
25 Q. Do you remember how Google has

1 defined "adult content"?
2 MS. MAUSER: Object to form.
3 Asked and answered.
4 BY MR. FREEMAN:
5 Q. You have to answer.
6 A. I have answered. As I sit here
7 today, I have not memorized the Ad Safety
8 Report. I know Google has listed their publicly
9 available criteria of what they view as adult
10 content. If you have the report, I'm happy to
11 walk through it with you.
12 MR. FREEMAN: I'm going to
13 mark -- which is Ferrante Lit Exhibit --
14 we're at 3, correct?
15 THE WITNESS: Correct.
16 (Document marked for
17 identification as Ferrante-Lit
18 Deposition Exhibit No. 3.)
19 BY MR. FREEMAN:
20 Q. Just for identification this is
21 the 2021 Ad Safety Report being one of the
22 things referenced to make Appendix C charts; is
23 that correct?
24 A. Okay. So what's your question?
25 Q. I'm asking is that correct?

1 A. What's your question, is what I
2 asked.
3 Q. That Ferrante deposition Exhibit
4 Number 3 is one of the reports that form the
5 basis of the charts as listed in Appendix C?
6 A. I didn't create these charts.
7 Google created these charts.
8 Q. No, did you rely -- you're saying
9 Google made these charts?
10 A. Yes.
11 Q. So what did you do in preparation
12 for Appendix C?
13 A. What did I do?
14 Q. Well, you're saying you didn't
15 make the charts.
16 A. I reviewed the material and
17 provided it in the report.

5 Q. Doesn't Ferrante Lit Exhibit 3
6 form part of the basis of Figure I, Figure L and
7 Figure J and Figure K?
8 A. You're asking me if I took the
9 data from 3 and created these graphs?
10 Q. Actually just --
11 A. These graphs --
12 Q. Where did the data come from to
13 make the graph of Figure I?
14 A. I'm sure it's cited in my report.
15 I don't know exactly where.

| Page 150 | Page 152 |
|---|---|
| <p>1 this type of material.</p> <p>2 BY MR. FREEMAN:</p> <p>3 Q. During 2020 to 2022, how many ads</p> <p>4 were blocked or restricted for inappropriate</p> <p>5 content by Amazon?</p> <p>6 A. I can't answer that as I sit here</p> <p>7 right now.</p> <p>8 Q. How many ads were blocked or</p> <p>9 restricted for inappropriate content by Meta?</p> <p>10 A. I can't answer that as I sit here</p> <p>11 right now.</p> <p>12 Q. How many ads were blocked or</p> <p>13 restricted for inappropriate content by Criteo?</p> <p>14 A. I can't answer that as I sit here</p> <p>15 right now.</p> <p>16 Q. How many ads were blocked or</p> <p>17 restricted by The Trade Desk for inappropriate</p> <p>18 content?</p> <p>19 A. I can't answer take as I sit here</p> <p>20 right now.</p> <p>21 Q. How many ads were blocked or</p> <p>22 restricted by OpenX for inappropriate content?</p> <p>23 A. I can't answer that as I sit here</p> <p>24 right now.</p> <p>25 Q. How many ads were blocked or</p> | <p>1 THE WITNESS: As I said before,</p> <p>2 there was no clear, consistent measure</p> <p>3 of that data.</p> <p>4 BY MR. FREEMAN:</p> <p>5 Q. So the answer is you didn't do</p> <p>6 any comparative analysis, right?</p> <p>7 A. Because the data was not</p> <p>8 available to me.</p> <p>9 Q. Moving to Figure L in Appendix C,</p> <p>10 what is figure L?</p> <p>11 A. Subcategory titled</p> <p>12 "misrepresentation."</p> <p>13 Q. What type of ads violated</p> <p>14 Google's policy as it relates to</p> <p>15 misrepresentation of an ad?</p> <p>16 A. I'm sorry, can you repeat the</p> <p>17 question?</p> <p>18 Q. What type of ad violated Google's</p> <p>19 policy as it relates to misrepresentation of an</p> <p>20 ad?</p> <p>21 A. An ad that Google technologies</p> <p>22 and/or professionals deemed a violation of their</p> <p>23 misrepresentation policy.</p> <p>24 Q. Did you review the underlying</p> <p>25 data as it supports Figure L?</p> |
| Page 151 | Page 153 |
| <p>1 restricted by Magnite for inappropriate content</p> <p>2 during this timeframe?</p> <p>3 A. I can't answer that as I sit here</p> <p>4 right now.</p> <p>5 Q. How many ads were blocked or</p> <p>6 restricted for inappropriate content by PubMatic</p> <p>7 during this timeframe?</p> <p>8 A. I can't answer that as I sit here</p> <p>9 right now.</p> <p>10 Q. How many ads were blocked or</p> <p>11 restricted by Index Exchange during this</p> <p>12 timeframe for inappropriate content?</p> <p>13 A. I can't answer that as I sit here</p> <p>14 right now.</p> <p>15 Q. How many ads were blocked or</p> <p>16 restricted by Xandr for inappropriate content</p> <p>17 during this timeframe?</p> <p>18 A. I can't answer that as I sit here</p> <p>19 right now.</p> <p>20 Q. What comparative analysis did you</p> <p>21 do to compare Google's rate of blocking</p> <p>22 inappropriate content ads to competitors?</p> <p>23 MS. MAUSER: Object to form, to</p> <p>24 the extent you're characterizing his</p> <p>25 report.</p> | <p>1 A. I did not.</p> <p>2 Q. What did you do to confirm the</p> <p>3 accuracy of those numbers?</p> <p>4 A. I did not.</p> <p>5 Q. You did not confirm the accuracy</p> <p>6 of those numbers?</p> <p>7 A. Outside of pulling it from Google</p> <p>8 and their publicly available domain, I did not</p> <p>9 feel the need.</p> <p>10 Q. How was pulling it from Google</p> <p>11 confirming the accuracy?</p> <p>12 A. The Google domain, pulling it</p> <p>13 from Google's website.</p> <p>14 Q. How does pulling that information</p> <p>15 from Google's domain confirm the accuracy of the</p> <p>16 numbers?</p> <p>17 A. As I've said in the past, Google</p> <p>18 is my client, is providing information publicly</p> <p>19 available to the world via their public domain,</p> <p>20 Google.com. This was pulled from an official</p> <p>21 support site, policy site. I pulled the data, I</p> <p>22 pulled the information and believed it to be as</p> <p>23 accurate as possible.</p> <p>24 Q. How can you say you believe it to</p> <p>25 be as accurate as possible if you did nothing to</p> |

| | |
|--|---|
| <p style="text-align: right;">Page 154</p> <p>1 confirm the accuracy of the numbers?</p> <p>2 MS. MAUSER: Object to form.</p> <p>3 THE WITNESS: Because I have no</p> <p>4 reason to doubt it. And, again,</p> <p>5 consistent with what I said earlier, the</p> <p>6 scope of my investigation, this is just</p> <p>7 supporting document -- documentation to</p> <p>8 demonstrate Google's efforts to ensure a</p> <p>9 safe and secure experience for</p> <p>10 consumers.</p> <p>11 BY MR. FREEMAN:</p> <p>12 Q. Are you saying you have no reason</p> <p>13 to doubt any information put out by Google on</p> <p>14 Google's domain?</p> <p>15 A. I didn't say that.</p> <p>16 MS. MAUSER: Object to form.</p> <p>17 BY MR. FREEMAN:</p> <p>18 Q. So what makes -- what would make</p> <p>19 you doubt information posted about Google by</p> <p>20 Google on a Google domain?</p> <p>21 A. It depends on the circumstances.</p> <p>22 Q. What circumstances would make you</p> <p>23 question it or doubt it?</p> <p>24 MS. MAUSER: Object to form.</p> <p>25 THE WITNESS: It would depend on</p> | <p style="text-align: right;">Page 156</p> <p>1 that Google is making an effort. Again,</p> <p>2 they're an innovator; they're a leader.</p> <p>3 They're clearly taking steps to combat</p> <p>4 this risk that their consumers -- their</p> <p>5 viewers and their consumers may</p> <p>6 encounter.</p> <p>7 There is no silver bullet in this</p> <p>8 game. There is no perfect. And based</p> <p>9 on what I've seen, Google, compared to</p> <p>10 their peers, they are leaders in the</p> <p>11 space. So for me to sit down and spend</p> <p>12 time validating this particular data, it</p> <p>13 -- I'm not sure -- I'm not sure how you</p> <p>14 think that would change things.</p> <p>15 BY MR. FREEMAN:</p> <p>16 Q. How does the number of</p> <p>17 inappropriate ads removed by Google from its</p> <p>18 platform compare to the number of inappropriate</p> <p>19 ads removed by publishers using header bidding?</p> <p>20 MS. MAUSER: Object to form.</p> <p>21 THE WITNESS: Excuse me?</p> <p>22 BY MR. FREEMAN:</p> <p>23 Q. How does the amount of</p> <p>24 inappropriate ads removed by Google during 2020</p> <p>25 to 2022, how does that compare to the number of</p> |
| <p style="text-align: right;">Page 155</p> <p>1 the circumstances. But I can tell you</p> <p>2 in this particular case, it wasn't going</p> <p>3 to change my views, my opinions.</p> <p>4 BY MR. FREEMAN:</p> <p>5 Q. The numbers of ads blocked</p> <p>6 wouldn't change your opinion about how effective</p> <p>7 Google is at blocking ads?</p> <p>8 MS. MAUSER: Object to form,</p> <p>9 mischaracterizes his answer.</p> <p>10 THE WITNESS: What I'm saying is</p> <p>11 that I provided this material to</p> <p>12 demonstrate that Google has mechanisms</p> <p>13 in place. A number of ads blocked is</p> <p>14 going do go up and down; it is a cat and</p> <p>15 mouse game. That's how security works,</p> <p>16 and it's going to constantly evolve and</p> <p>17 change. So you're asking me did I</p> <p>18 verify the data in Figure I, J, K, L and</p> <p>19 I'm assuming the others, and you're</p> <p>20 going to get similar answers, that's not</p> <p>21 how security works. Security is an</p> <p>22 evolving threat.</p> <p>23 And so for me to spend time</p> <p>24 verifying and validating this data,</p> <p>25 doesn't change my views in the sense</p> | <p style="text-align: right;">Page 157</p> <p>1 inappropriate ads removed by publishers who are</p> <p>2 using header bidding?</p> <p>3 MS. MAUSER: Object to form.</p> <p>4 THE WITNESS: I can't answer that</p> <p>5 as I sit here right now.</p> <p>6 BY MR. FREEMAN:</p> <p>7 Q. Why can't you answer it?</p> <p>8 A. Because that's a very defined</p> <p>9 dataset that you're asking about. And you're</p> <p>10 asking about a single entity versus a cluster of</p> <p>11 entities that are using two different</p> <p>12 frameworks. And those frameworks have been</p> <p>13 implemented many different ways. So, I mean,</p> <p>14 you're asking an impossible question.</p> <p>15 Q. Why is it impossible to get data</p> <p>16 from publishers about how many ads they removed</p> <p>17 or blocked for being inappropriate content?</p> <p>18 MS. MAUSER: Object to form.</p> <p>19 THE WITNESS: Can you reask the</p> <p>20 question?</p> <p>21 BY MR. FREEMAN:</p> <p>22 Q. You said that I was asking an</p> <p>23 impossible question, so my follow-up to that was</p> <p>24 why is it impossible to get data from publishers</p> <p>25 about how many ads they removed or blocked for</p> |

1 being inappropriate content?

2 A. That wasn't your exact question.

3 Your question was how many publishers who

4 leverage header bidding; did I hear that

5 correctly?

6 Q. Correct.

7 How does the number of ads that

8 were blocked by Google during this timeframe

9 compare to the amount of ads removed by

10 publishers who are using header bidding --

11 MS. MAUSER: Object to form.

12 BY MR. FREEMAN:

13 Q. -- during the same timeframe?

14 A. And how does it compare? The

15 answer I have to that question is that is a

16 unique set of data that I do not have right in

17 front of me, so I can't answer that.

18 Q. Have you seen any datasets

19 comparing Google's quantity of ads blocked or

20 restricted to any other company?

21 A. I'm sure I have. There's a lot

22 of information out there.

23 Q. Was that information cited in

24 your report?

25 A. If I relied on it -- if it's

1 referenced or I relied on it then, yes, it would

2 be cited in my report.

3 Q. Why wouldn't you have relied on a

4 comparative dataset of Google compared to other

5 companies?

6 A. Well, I discussed it earlier. I

7 think -- I don't believe that there's a single

8 source that actually receives the data and

9 interprets the data equally across platforms. I

10 think that the data is confusing. I think that

11 the way various companies collect the data and

12 report on the data varies.

13 So I didn't see anything publicly

14 available to me that I thought made -- made

15 sense or -- or I thought I could verify and sit

16 before you today and talk you through it.

17 Q. Moving to Figure L in Appendix C,

18 what's Figure L?

19 A. I'm sorry, of my report?

20 Q. Yeah, that's correct.

21 A. It is a subcategory "Bad Ads

22 Blocked or Removed by Google." The subcategory

23 is titled "Misrepresentation."

24 Q. Then what is Figure M right below

25 it?

1 A. It's a subcategory of bad ads

2 blocked or removed by Google. The subcategory

3 is titled "Enabling Dishonest Behavior."

4 Q. Did you review the underlying

5 data for Figure M?

6 A. I did not.

7 Q. What did you do to confirm the

8 accuracy of Figure M, the numbers that support

9 Figure M?

10 A. Consistent with my earlier

11 questions of the other subcategories.

12 Q. Do you know what -- the amount of

13 ads blocked or restricted for enabling dishonest

14 behavior by any other company?

15 A. As I sit here right now, I can't

16 answer that.

██

██

██

██

██

23 Q. Did you review the underlying

24 data that supports Figure N?

25 A. Consistent with earlier, similar

1 questions, I did not.

2 Q. What did you do to confirm the

3 accuracy of the numbers that support Figure N?

4 A. I did not.

5 Q. Do you know how many ads or --

6 how many ads were blocked or restricted by any

7 other company for being dangerous products or

8 services?

9 A. As I sit here right now, I can't

10 answer that.

11 Q. What's Figure O?

12 A. Figure O is another subcategory

13 of bad ads blocked or removed by Google. This

14 category is titled "Counterfeit Goods."

15 Q. Did you review the underlying

16 data to support Figure O?

17 A. I did not.

18 Q. What you did do to confirm the

19 accuracy of the numbers?

20 A. Consistent with earlier, similar

21 questions and answers, I did not.

22 Q. Do you know how many ads were

23 blocked or restricted by any other company for

24 being counterfeit goods?

25 A. As I sit here right now, I can't

1 answer that.

[REDACTED]

1 BY MR. FREEMAN:

2 Q. Okay. How would you -- how would
3 you define data?

4 A. How would I define data? I mean,
5 that's a complicated question. I would say data
6 is on this sheet of paper.

7 Q. Is the Trade Press article data?

8 A. Yes.

9 Q. Okay.

10 A. So that's where I think we're
11 talking about two different things.

12 Q. Did you review the underlying
13 data collected by Google that supports Figure E?

14 A. You're referring to the
15 statistical data?

16 Q. That's right.

17 A. Yes -- no, I did not.

18 Q. What did you do to confirm the
19 accuracy of the statistical data that supports
20 Figure E?

21 A. Again, it's -- it's data either
22 provided to me from Google or publicly available
23 from the Google domain and their various
24 official support sites documenting how Google
25 operates. And so I reviewed that material,

1 analyzed it, and that is my views here on page
2 19.

3 Q. How many ads that violated
4 Google's policies and therefore would be deemed
5 a bad ad were not blocked that should have been
6 blocked by their policies?

7 A. I can't answer that. I don't --
8 I don't even know if that question is
9 answerable.

10 Q. You don't think -- strike that.
11 Do you know whether Google tries
12 to evaluate the effectiveness of their filters
13 in flagging bad ads?

14 A. So are you asking me if I know
15 that?

16 Q. Yeah, do you know that?

17 A. I don't know that, but I have to
18 imagine they do.

19 Q. Did you ask to review that type
20 of information?

21 A. I did not.

22 Q. Why didn't you ask to review that
23 type of information?

24 A. I didn't think that was necessary
25 for me to reach my conclusions.

11 Q. Did you review the underlying
12 data that supports Figure E?
13 A. Yes, I did.
14 Q. I'm sorry?
15 A. The underlying data that supports
16 Figure E.
17 Q. Yeah.
18 A. Meaning citation 46, did I review
19 that? Yes, of course.
20 Q. Which citation in footnote 46 is
21 a dataset?
22 MS. MAUSER: Object to form.
23 THE WITNESS: I'm sorry, I think
24 we're talking about two different
25 things.

| | |
|---|--|
| <p style="text-align: right;">Page 166</p> <p>1 Q. Don't you think that the rate at</p> <p>2 which they're catching bad ads would impact any</p> <p>3 of your conclusions in your report?</p> <p>4 MS. MAUSER: Object to form.</p> <p>5 THE WITNESS: You will have to</p> <p>6 reask the question.</p> <p>7 BY MR. FREEMAN:</p> <p>8 Q. Does the rate at which Google</p> <p>9 catches and therefore restricts or block bad</p> <p>10 ads, would that impact any of your conclusions</p> <p>11 in your report?</p> <p>12 A. It would be a data point, but I</p> <p>13 don't -- I mean, you're asking a question that I</p> <p>14 don't think appreciates or takes into</p> <p>15 consideration the industry.</p> <p>16 As I said earlier, this is a</p> <p>17 cat-and-mouse game. And you asked me if</p> <p>18 Google -- I forget how you put it -- refines</p> <p>19 their filters to catch bad actors, and I said I</p> <p>20 didn't know, but I have to imagine. And so</p> <p>21 you're asking me if I think the rate in which</p> <p>22 they catch bad actors would sway my view.</p> <p>23 It's a data point but looking at</p> <p>24 the totality of data, no, it really wouldn't.</p> <p>25 The fact of the matter is that Google has</p> | <p style="text-align: right;">Page 168</p> <p>1 need data to review that and talk through it</p> <p>2 with you. It's a complicated subject.</p> <p>3 What I can tell you, though, is</p> <p>4 that Google has implemented, innovated and led</p> <p>5 the charge on creating and sharing technologies</p> <p>6 with the industry to help protect users.</p> <p>7 Q. In going back to Figure E from</p> <p>8 2014 to 2022, how many bad ads were blocked or</p> <p>9 restricted by Amazon?</p> <p>10 A. As I sit here right now, I can't</p> <p>11 answer that question.</p> <p>12 Q. What about Criteo?</p> <p>13 A. I can't answer that question.</p> <p>14 Q. Meta?</p> <p>15 A. As I sit here right now, I can't</p> <p>16 answer that question.</p> <p>17 Q. The Trade Desk?</p> <p>18 A. As I sit here right now, I can't</p> <p>19 answer that question.</p> <p>20 Q. OpenX?</p> <p>21 A. As I sit here right now, I can't</p> <p>22 answer that question.</p> <p>23 Q. Magnite?</p> <p>24 A. As I sit here right now, I can't</p> <p>25 answer that question.</p> |
| <p style="text-align: right;">Page 167</p> <p>1 demonstrated that they are a leader in this</p> <p>2 space, they are an innovator, they are working</p> <p>3 with colleagues across the industry to protect</p> <p>4 their consumers. And so the refinement of</p> <p>5 filters and the success of those filters are not</p> <p>6 going to change my views because that is one</p> <p>7 single data point in hundreds, if not thousands,</p> <p>8 of data-points that you need to consider in</p> <p>9 totality in the security industry.</p> <p>10 This is complicated material.</p> <p>11 And one filter or the refinement of that filter</p> <p>12 or the success or failure of that filter is not</p> <p>13 going to define an organization in their</p> <p>14 security posture in the efforts that they've</p> <p>15 taken to protect consumers.</p> <p>16 Q. Does Google block or restrict bad</p> <p>17 ads at a better rate than any other company?</p> <p>18 MS. MAUSER: Object to form.</p> <p>19 THE WITNESS: As I sit here right</p> <p>20 now, I'm not sure I can answer that</p> <p>21 question. I can tell you --</p> <p>22 BY MR. FREEMAN:</p> <p>23 Q. Why not?</p> <p>24 A. Why not? Because I would need</p> <p>25 data. And you said "any other company," I would</p> | <p style="text-align: right;">Page 169</p> <p>1 Q. PubMatic?</p> <p>2 A. As I sit here right now, I can't</p> <p>3 answer that question.</p> <p>4 Q. Index Exchange?</p> <p>5 A. As I sit here right now, I can't</p> <p>6 answer that question.</p> <p>7 Q. Xandr?</p> <p>8 A. As I sit here right now, I can't</p> <p>9 answer that question.</p> <p>10 Q. Compared to publishers using</p> <p>11 header bidding?</p> <p>12 MS. MAUSER: Object to form.</p> <p>13 THE WITNESS: As I sit here right</p> <p>14 now, I can't answer that question.</p> <p>15 I do want to highlight that I</p> <p>16 think -- I do not think you can quantify</p> <p>17 success or failure based on the number</p> <p>18 of blocked ads. It is a data point and</p> <p>19 the totality of data that you have to</p> <p>20 look at.</p> <p>21 BY MR. FREEMAN:</p> <p>22 Q. But not just the success rate,</p> <p>23 just the sheer quantity of ads that are blocked</p> <p>24 by another company; is that not a data point?</p> <p>25 MS. MAUSER: Object to form.</p> |

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1 report in front of you?

2 A. I do.

[REDACTED]

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1 A. I mean, the header bidding
2 wrappers were written in the web pages
3 themselves. So when you say what companies, it
4 was code that was written by a programmer in the
5 page so --

6 Q. And that code would take them to
7 where?

8 A. It would connect them to SSPs.
9 It would connect them to advertisers. That code
10 would allow them to facilitate the bidding
11 process to place bids on their ads.

12 Q. So my question is is what
13 companies created the code to facilitate header
14 bidding?

15 A. What companies created the header
16 bidding code?

17 Q. Yeah.

18 A. I don't know if there was a
19 single company that created it, or if it was --
20 just became an industry -- an industry adopted
21 code.

22 Q. But certain companies then issued
23 a product to help publishers with header
24 bidding, right?

25 A. Well, an entire industry was

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3 Q. So when heading bidding started
4 to become widely adopted in 2014 and 2015, what
5 header bidding wrappers were used mostly by
6 publishers?

7 A. What header bidding wrappers?

8 Q. Yeah.

9 A. Header bidding wrappers written
10 by the various publishers on their sites.

11 Q. What companies had products in
12 header bidding?

13 A. What companies?

14 Q. Yeah, what companies offered
15 header bidding?

16 A. In 2014 and 2015, it was becoming
17 adopted by the players in the industry.

18 Q. So what is a header bidding
19 wrapper?

20 A. Header bidding wrapper is
21 JavaScript code that sits in the header of a web
22 page that facilitates the bids, the bidding
23 process for ad -- advertisements on that page.

24 Q. What companies offered header
25 bidding wrappers to publishers in 2014 and 2015?

1 built around online advertisement.

2 Q. I know, but I want to talk about
3 the part of online advertisement of using header
4 bidding?

5 A. Correct.

6 Q. Were there certain companies that
7 had products to help publishers with header
8 bidding?

9 A. So header bidding is -- is a
10 framework, okay. How it was implemented -- so
11 it's a technology. How that technology was
12 implemented varied across the board. And so,
13 yes, did that framework plug into other players
14 in the industry, SSPs, DSPs, ad networks, sure,
15 yes. But in the end that header bidding code
16 allowed the publisher, the website, to receive
17 bids for advertisement space and then place
18 advertisements on their page.

19 Q. But do you know or can you list
20 for me any header bidding wrappers that were
21 used in 2014 and 2015?

22 MS. MAUSER: Object to form. Go
23 ahead.

24 THE WITNESS: I'm not sure --
25 you're asking me -- header bidding is

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|--|--|
| <p>1 code. It is JavaScript written code. I</p> <p>2 could sit down and write header bidding</p> <p>3 code. Does that make it the Ferrante</p> <p>4 header bidding code? Do you understand</p> <p>5 what I'm saying? So when you say "what</p> <p>6 companies," I'm not sure I understand.</p> <p>7 BY MR. FREEMAN:</p> <p>8 Q. Is header bidding different than</p> <p>9 header bidding wrapper?</p> <p>10 A. "Header bidding wrapper" is the</p> <p>11 code. "Header bidding" is the term used to</p> <p>12 describe the framework and the process in which</p> <p>13 it occurs.</p> <p>14 Q. Okay. And you principally make</p> <p>15 three points about header bidding in security</p> <p>16 vulnerabilities about bad actors can exploit,</p> <p>17 right? You talk about; one, the inability to</p> <p>18 prevent fraud amongst the noise -- that's a</p> <p>19 phrase that you used, "noise" in quotes of</p> <p>20 multiple calls; second, the lack of -- and then</p> <p>21 the phrase you used is "guardrails" to protect</p> <p>22 against malvertising; and third, you say -- you</p> <p>23 talk about user and publisher data leakage, in</p> <p>24 particular vulnerabilities of header bidding, do</p> <p>25 I have that, in broad brushes?</p> | <p>1 side?</p> <p>2 A. Server side header bidding, which</p> <p>3 is an implementation of the header bidding</p> <p>4 framework. And evolution of the header bidding</p> <p>5 framework is when rather than that code</p> <p>6 executing in the browser, it is calling a</p> <p>7 server, connecting to that server and allowing</p> <p>8 the server to do the lion's share of the</p> <p>9 processing and the work and then returning</p> <p>10 results.</p> <p>11 Q. One of the phrases you use is</p> <p>12 kind of the distance between the advertisers and</p> <p>13 the publishers and security vulnerabilities with</p> <p>14 that; is that right?</p> <p>15 A. Yes.</p> <p>16 Q. When you talk about distance in</p> <p>17 this context, what are you referring to?</p> <p>18 A. Can you point to my report of</p> <p>19 where I reference that?</p> <p>20 Q. I'm just asking on a high level</p> <p>21 of do you think there's any different security</p> <p>22 concerns about the distance between advertisers</p> <p>23 and publishers?</p> <p>24 A. Well, I think I know what you're</p> <p>25 referring to, and I just want to confirm it, so</p> |
| Page 179 | Page 181 |
| <p>1 A. In broad brushes. There are also</p> <p>2 others, but we can talk through them.</p> <p>3 Q. Do you make any distinction in</p> <p>4 your analysis between client side and server</p> <p>5 side header bidding?</p> <p>6 A. Client side or server side header</p> <p>7 bidding, do I make any distinction?</p> <p>8 Q. Yeah.</p> <p>9 A. I talk about header bidding and</p> <p>10 how it -- I talk about header bidding in the</p> <p>11 sense of telling a story about where it came</p> <p>12 from and where it is today.</p> <p>13 Q. What is the difference between</p> <p>14 client side header bidder and server side header</p> <p>15 bidder?</p> <p>16 A. Client side header bidding is</p> <p>17 when the entire process is facilitated through</p> <p>18 the client, the web browser, the actual</p> <p>19 consumers' machine. As they sit in front of</p> <p>20 their machine, the code is in the page that they</p> <p>21 visit, and that code functions, makes the calls,</p> <p>22 receives the returns, process the returns and</p> <p>23 displays the ads. That is client side header</p> <p>24 bidding.</p> <p>25 Q. How does that differ from server</p> | <p>1 I want to give you the best possible answer</p> <p>2 here. So if you could point to the paragraph.</p> <p>3 Q. Do you think there's any</p> <p>4 difference in terms of the distance between</p> <p>5 advertisers and publishers with those who are</p> <p>6 doing client side header bidding as opposed to</p> <p>7 those who are doing the server side client</p> <p>8 bidding?</p> <p>9 A. Okay, can you give me a second?</p> <p>10 (Witness reviews document.)</p> <p>11 Do you want to reask your</p> <p>12 question, please?</p> <p>13 Q. Do you think there's any</p> <p>14 difference in terms of the distance between</p> <p>15 advertisers and publishers with those who use</p> <p>16 client side header bidding as opposed to those</p> <p>17 who use server side client bidding?</p> <p>18 MS. MAUSER: Object to form.</p> <p>19 THE WITNESS: So do I think</p> <p>20 there's distance?</p> <p>21 BY MR. FREEMAN:</p> <p>22 Q. That's right.</p> <p>23 A. Between those who facilitate</p> <p>24 client side and those who facilitate server</p> <p>25 side?</p> |

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|--|--|
| <p>1 then would give you an opportunity to launch</p> <p>2 malware on someone's machine that would give</p> <p>3 you -- essentially, you would buy access to</p> <p>4 consumers' machines.</p> <p>5 You would be able to collect data</p> <p>6 on your competitors because in addition to you</p> <p>7 being part of the bid process, you see what</p> <p>8 others bid. I mean, those are four significant</p> <p>9 security concerns that I reference in my report</p> <p>10 that header bidding introduced.</p> <p>11 Q. Where did you get the code to</p> <p>12 insert into the website?</p> <p>13 A. It's publicly available code.</p> <p>14 Q. Where?</p> <p>15 A. I'd have to go back and check.</p> <p>16 Q. Then you relied on these field</p> <p>17 test results to support your claim that data</p> <p>18 leakage occurs as a result of the simultaneous</p> <p>19 manner in which calls are sent to bidders?</p> <p>20 A. It's not a secret; it's very</p> <p>21 well-documented. What I wanted to do was</p> <p>22 actually see it in play like we do every single</p> <p>23 day. We do this with all of our work, with all</p> <p>24 of our technical investigations. Of course we</p> <p>25 want to see it in real time and --</p> | <p>1 wanted to field test it, we wanted to</p> <p>2 see it. This is what we do every single</p> <p>3 day. We are an investigative -</p> <p>4 technical investigative firm. Of course</p> <p>5 we're going to look at this. This</p> <p>6 wasn't hard to do.</p> <p>7 BY MR. FREEMAN:</p> <p>8 Q. Where are your field test results</p> <p>9 cited in your report?</p> <p>10 A. I mean, the results are in the</p> <p>11 report. You see it. I mean, when you say</p> <p>12 "field test results," you're talking about</p> <p>13 looking at a screen.</p> <p>14 Q. Where do you say that you field</p> <p>15 tested this in your report?</p> <p>16 A. You know, I'm not sure but --</p> <p>17 Q. Take your time. Look at the</p> <p>18 report in front of you and tell me where it says</p> <p>19 that you field tested header bidding?</p> <p>20 A. This is what we do through the</p> <p>21 course of the investigation. We read, we</p> <p>22 digest -- I talked about this earlier, how did</p> <p>23 we get here? We digested all the documents, and</p> <p>24 we wear -- and we took steps to verify the</p> <p>25 information that we learned. I mean, we just</p> |
| Page 187 | Page 189 |
| <p>1 Q. So --</p> <p>2 A. I'm sorry to interrupt. And it's</p> <p>3 very well-documented; there are lots of articles</p> <p>4 out there. I mean, it is actually so</p> <p>5 well-documented that that's where you can read</p> <p>6 the story about how header bidding has evolved</p> <p>7 to what it is today, which is a more secure</p> <p>8 version of the earlier version -- you referred</p> <p>9 to it earlier -- if done correctly, server side</p> <p>10 header bidding. But that's not -- I mean, that</p> <p>11 is just such an evolution of it to where it is</p> <p>12 today.</p> <p>13 Q. Just want to make sure I get the</p> <p>14 time right.</p> <p>15 After you were retained by Google</p> <p>16 in this particular case, you ran your own field</p> <p>17 test to determine how much data leakage there</p> <p>18 was using the header bidding; is that right?</p> <p>19 MS. MAUSER: Object to form.</p> <p>20 THE WITNESS: So through the</p> <p>21 course of this investigation, we found</p> <p>22 lots of documentation highlighting the</p> <p>23 risks. Given the way we operate in the</p> <p>24 industry and how we operate and conduct</p> <p>25 these investigations, yes, of course, we</p> | <p>1 talked extensively about statistical data and</p> <p>2 whether or not we validated it. Of course we're</p> <p>3 going to validate these claims.</p> <p>4 Q. How would anyone know reading</p> <p>5 your report that you conducted a field test</p> <p>6 about header bidding?</p> <p>7 A. I'm not sure I understand the</p> <p>8 question. I mean, my report is my report.</p> <p>9 There's lots of data in my report.</p> <p>10 Q. But one of the things that you</p> <p>11 said supported the claim that you said in</p> <p>12 paragraph 75 was that you did your own</p> <p>13 independent field test, right?</p> <p>14 A. Of course.</p> <p>15 Q. What I'm asking is where is the</p> <p>16 fact that you conducted a field test in the</p> <p>17 report?</p> <p>18 A. As I said earlier, I mean, it's</p> <p>19 what we do through the course of our</p> <p>20 investigations. It is review, verify.</p> <p>21 What sort of security researcher</p> <p>22 would not want to look at this and be able to</p> <p>23 verify it before they sign their name and raise</p> <p>24 their right hand and swear to it?</p> <p>25 Q. Why didn't you include it in your</p> |

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|---|--|
| <p>1 report?</p> <p>2 A. This -- this is the -- I mean,</p> <p>3 this is important. And so I don't understand</p> <p>4 why I wouldn't verify it.</p> <p>5 Q. Why wouldn't you include it in</p> <p>6 your report if it supports one of the arguments</p> <p>7 that you're making?</p> <p>8 A. But what do you want me to</p> <p>9 include? That's what I don't understand. I</p> <p>10 mean, this is -- this is like seconds in</p> <p>11 reviewing data on a screen as it traverses the</p> <p>12 wire.</p> <p>13 Q. Do you document that in any sort</p> <p>14 of way?</p> <p>15 A. Do we document it?</p> <p>16 Q. Yeah, the results of your field</p> <p>17 test?</p> <p>18 A. I mean, we did in the report, and</p> <p>19 we cite our material.</p> <p>20 Q. Aside from the report, do you</p> <p>21 document it in any fashion?</p> <p>22 A. I mean, of course we document our</p> <p>23 stuff.</p> <p>24 Q. So if the results of the field</p> <p>25 test were relied upon, why is it not in your</p> | <p>1 journal did you cite to support that in your</p> <p>2 report?</p> <p>3 A. I'm not sure. Maybe we can look</p> <p>4 in my cited sources, but it's no secret. It's</p> <p>5 well-documented. That is why we took the steps</p> <p>6 to do a quick field test.</p> <p>7 Q. Did you do any sort of</p> <p>8 comparative analysis of the amount of data</p> <p>9 leakage that occurs on header bidding that</p> <p>10 occurs through a bid through AdX?</p> <p>11 A. So I can't recall the exact</p> <p>12 players we used for the field test. But, again,</p> <p>13 I mean, separate from the field test it is very</p> <p>14 well-documented.</p> <p>15 And, again, I would just</p> <p>16 highlight that header bidding is a framework</p> <p>17 that is implemented a myriad of different ways.</p> <p>18 I mean, I would be surprised if there were two</p> <p>19 identical instances of header bidding</p> <p>20 implemented the same exact way at two different</p> <p>21 companies.</p> <p>22 Q. But how does the amount of data</p> <p>23 leakage from the use of header bidding compare</p> <p>24 to the data leakage from a bid request going</p> <p>25 through AdX?</p> |
| Page 191 | Page 193 |
| <p>1 Appendix B?</p> <p>2 MS. MAUSER: Object to form.</p> <p>3 THE WITNESS: I think -- I think</p> <p>4 you're thinking this was like a massive</p> <p>5 chemistry experiment with control groups</p> <p>6 and noncontrol groups or whatever. I</p> <p>7 mean, this was -- this was sniffing the</p> <p>8 wire for a short period of time as a</p> <p>9 user visited a website and just watching</p> <p>10 the data traverse. It's seconds. I</p> <p>11 mean, that's the point of header bidding</p> <p>12 being so insecure and why the need for</p> <p>13 it to evolve was so critical.</p> <p>14 BY MR. FREEMAN:</p> <p>15 Q. And you did this one time?</p> <p>16 A. That's all we needed to do.</p> <p>17 Q. And answer to that is yes, one</p> <p>18 time?</p> <p>19 A. That's all we needed to do, is</p> <p>20 one time.</p> <p>21 Q. You said that it's</p> <p>22 well-documented, the fact that data leakage is a</p> <p>23 result of header bidding, right?</p> <p>24 A. Yes.</p> <p>25 Q. What academic peer-reviewed</p> | <p>1 A. Well, again, I'm not sure how AdX</p> <p>2 has their header bidding implementation</p> <p>3 configured. But I can tell you -- I mean, let's</p> <p>4 take it to the framework level. Header bidding</p> <p>5 is code that sits on the browser. When called</p> <p>6 it has the send data about that user so it can</p> <p>7 conduct an accurate bidding process. Those</p> <p>8 bidders get access to that data. They're</p> <p>9 sitting there, part of the bidding process,</p> <p>10 seeing that data, collecting that data. And</p> <p>11 because it is done the way it is done, if you</p> <p>12 are on the network sniffing data packets, you</p> <p>13 are going to see that data because it is sent in</p> <p>14 clear text.</p> <p>15 Again, also, if you are hiding in</p> <p>16 plain site and have no intention of bidding, you</p> <p>17 can collect that data.</p> <p>18 If you are the highest bidder,</p> <p>19 you can buy access to users' machines. You can</p> <p>20 also collect competitive intel on your peers in</p> <p>21 that space.</p> <p>22 Q. So one of the articles that you</p> <p>23 cited in footnote 80, right, is an article title</p> <p>24 "Unraveling Header Bidding's Problems with User</p> <p>25 Data," right?</p> |

| Page 194 | Page 196 |
|---|---|
| <p>1 A. Yes.</p> <p>2 MS. MAUSER: Let me show you</p> <p>3 what's been marked as Ferrante-Lit</p> <p>4 Exhibit 4.</p> <p>5 (Document marked for</p> <p>6 identification as Ferrante-Lit</p> <p>7 Deposition Exhibit No. 4.)</p> <p>8 BY MR. FREEMAN:</p> <p>9 Q. Is Ferrante-Lit Exhibit 4 the</p> <p>10 same article that you were citing in paragraph</p> <p>11 75?</p> <p>12 A. I believe so.</p> <p>13 Q. And in the first -- the third</p> <p>14 paragraph on the first page of the article, it</p> <p>15 says, quote, "There are some real security</p> <p>16 concerns about header bidding that aren't being</p> <p>17 talked about," end quote.</p> <p>18 Do you see that?</p> <p>19 A. I do see that.</p> <p>20 Q. And the source of that</p> <p>21 information, though, is that "Ad fraud</p> <p>22 researcher requesting anonymity."</p> <p>23 Do you see that?</p> <p>24 A. I do see that.</p> <p>25 Q. So we have no idea who that</p> | <p>1 A. I'm sorry, can you repeat that</p> <p>2 statement?</p> <p>3 Q. There's nothing within this</p> <p>4 article that you cite that supports that there</p> <p>5 is firsthand knowledge of data leakage as a</p> <p>6 result of header bidding, right?</p> <p>7 A. No, I disagree with that</p> <p>8 statement.</p> <p>9 Q. Why do you disagree with that?</p> <p>10 A. Because clearly there's knowledge</p> <p>11 of it; there's an article written about it.</p> <p>12 It's just no one wants to -- you've got an</p> <p>13 anonymous source on page 1, and no one wants to</p> <p>14 raise their hand and state it.</p> <p>15 Q. So how do you know it's accurate?</p> <p>16 A. The article?</p> <p>17 Q. Yeah.</p> <p>18 A. It's an article written about it.</p> <p>19 I mean, it's got data that is -- like I said, it</p> <p>20 is well-documented across the internet.</p> <p>21 Q. Then why wouldn't you cite those</p> <p>22 documents as opposed to one that has the ad</p> <p>23 fraud researchers requesting anonymity and</p> <p>24 someone who doesn't want to share any firsthand</p> <p>25 experience?</p> |
| Page 195 | Page 197 |
| <p>1 person is, right?</p> <p>2 A. Sure.</p> <p>3 Q. Do you see then on page 4 of the</p> <p>4 document, that below would be 4 out of 9,</p> <p>5 talking about same?</p> <p>6 A. I see it, yes.</p> <p>7 Q. At the very bottom of the page,</p> <p>8 it says "While sources did not share any</p> <p>9 first-hand experiences, data leaking can be</p> <p>10 problematic for both publishers and users."</p> <p>11 Is that right?</p> <p>12 A. That's what it says, yes.</p> <p>13 Q. So in this article, there is no</p> <p>14 firsthand knowledge of actual data leakage being</p> <p>15 a problem as a result of header bidding, right?</p> <p>16 A. I don't know if I agree with that</p> <p>17 statement.</p> <p>18 Q. Why don't you agree with that</p> <p>19 statement?</p> <p>20 A. Because it says "sources did not</p> <p>21 share." Doesn't say they didn't have knowledge.</p> <p>22 Q. Okay. There's nothing within the</p> <p>23 article that you cite that supports that there</p> <p>24 is firsthand knowledge of data leakage as a</p> <p>25 result of header bidding, right?</p> | <p>1 A. You know, I can't answer that as</p> <p>2 I sit here right now, but I'm sure there's a</p> <p>3 reason.</p> <p>4 Q. As you sit here today, can you</p> <p>5 provide me a specific example of data leakage</p> <p>6 that occurred in the real world that resulted</p> <p>7 from the simultaneous manner in which calls are</p> <p>8 sent to bidders using header bidding?</p> <p>9 A. I'm sorry, can you reask the</p> <p>10 question?</p> <p>11 Q. Sure.</p> <p>12 Can you provide me a specific</p> <p>13 example, other than your field test, where data</p> <p>14 leakage occurred as a result of a -- of the</p> <p>15 simultaneous manner in which calls are sent to</p> <p>16 bidders when using header bidding?</p> <p>17 A. Can I give you a single</p> <p>18 example --</p> <p>19 Q. Yeah.</p> <p>20 A. -- outside of my field test of a</p> <p>21 very well-documented security gap in header</p> <p>22 bidding?</p> <p>23 Q. That's right.</p> <p>24 A. I mean, I could talk to you about</p> <p>25 it for hours.</p> |

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1 Q. That's not my question.

2 A. It happens all the time. Packet

3 sniffing on local networks happens all the time.

4 It is how this stuff is conducted. It is how

5 data on users is collected. I mean, this is

6 happening -- data leakage, okay, through header

7 bidding, it's happening all the time. So you're

8 asking me to give you a specific example? I

9 mean, I could talk to you about dozens of cases

10 I worked in the FBI. I could talk to you about

11 cases I'm still working today where this data is

12 available because of improperly -- improperly

13 configured websites. I mean, this is a common

14 risk in the industry.

15 Q. You had dozens of cases you

16 worked on at the FBI that was data leakage in

17 regards to header bidding?

18 A. Data leakage with respect to

19 websites.

20 Q. Okay.

21 A. And user data.

22 Q. That's not what I'm talking

23 about.

24 If it's so well-documented, why

25 can't you provide me a single example, other

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1 than your field test, where data leakage

2 occurred as a result of the simultaneous manner

3 in which calls are sent to bidders?

4 MS. MAUSER: Object to form.

5 THE WITNESS: I think I've

6 answered the question.

7 BY MR. FREEMAN:

8 Q. What's the example then, repeat

9 it then?

10 A. There are -- I've worked many

11 cases where user data leaks from a website.

12 Q. But as a result of the

13 simultaneous manner in which calls are sent to

14 bidders in header bidding? That's my question.

15 A. Okay. I'm not sure if I can

16 answer that right now.

17 Q. So as you sit here today, you

18 can't provide me a single example, other than

19 your field test, where data leakage occurred as

20 a result of the simultaneous manner in which

21 calls are sent to bidders in header bidding?

22 MS. MAUSER: Object to form.

23 THE WITNESS: As I sit here

24 today, I cannot reference a case right

25 now.

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1 BY MR. FREEMAN:

2 Q. I want to move on to your topic

3 about the lack of guardrails within header

4 bidding.

5 What do you mean when you use the

6 phrase "guardrails"?

7 Sir, I'm not asking about the

8 exhibit anymore.

9 A. I know. I'm still reading it,

10 though.

11 Q. I have a specific amount of time

12 I'm allotted.

13 I'm asking you when you use the

14 phrase "guardrails," what do you mean by that

15 phrase?

16 A. I mean when you -- in the context

17 of my report, I mean when you put revenue over

18 safety, and you do not take steps to vet or

19 understand your customers. And so you introduce

20 a lot of players, some nefarious players into

21 the ecosystem.

7 Q. What peer-reviewed research do

8 you have to support that claim?

9 A. I'm wondering if it's cited. I

10 mean, it's very well-documented.

11 Q. Then why didn't you cite the very

12 well-documented research to support that claim

13 in your -- in your report?

14 A. I'm not sure I didn't. I mean,

15 going back to the Digiday piece.

16 Q. Are you saying that you did cite

17 to a peer-reviewed journal that supports that

18 claim?

19 A. I'm sorry what was your question?

20 Q. Are you saying you did cite to a

21 peer-reviewed journal that supports that claim?

22 A. A peer-reviewed journal?

23 Q. Yeah.

24 A. I don't think I cited a

25 peer-reviewed journal, but it's very

| Page 202 | Page 204 |
|--|--|
| <p>1 well-documented.</p> <p>2 Q. If it's very well-documented, why</p> <p>3 didn't you cite to any document after making</p> <p>4 that statement in your report?</p> <p>5 A. I believe I did.</p> <p>6 Q. Okay. Let's go back to it.</p> <p>7 A. I mean --</p> <p>8 Q. Paragraph 73, the statement "With</p> <p>9 header bidding, there was a lack of guardrails</p> <p>10 and standards for entry and participation,</p> <p>11 therefore making it easier for threat actors,</p> <p>12 whose tactics include malvertising, to enter and</p> <p>13 participate in header bidding auctions."</p> <p>14 Do you see that?</p> <p>15 A. Mm-hmm.</p> <p>16 Q. Do you have any footnote for that</p> <p>17 particular statement?</p> <p>18 A. There is no footnote for that</p> <p>19 statement.</p> <p>20 Q. So what are you relying on to</p> <p>21 make that statement?</p> <p>22 A. My professional experience,</p> <p>23 totality of data that I reviewed, the fact that</p> <p>24 the statistics, further in the paragraph,</p> <p>25 highlight that by implementing vetting program</p> | <p>1 results?</p> <p>2 A. Correct.</p> <p>3 Q. And the statistics that you cite</p> <p>4 in paragraph 73 is from 2013, right?</p> <p>5 A. That is correct.</p> <p>6 Q. And that year, then, is before</p> <p>7 header bidding was widely adopted by publishers,</p> <p>8 right?</p> <p>9 A. That is.</p> <p>10 Q. So the statistic analysis that</p> <p>11 you have cited in paragraph 73 has nothing to do</p> <p>12 with header bidding?</p> <p>13 A. It has to do with guardrails,</p> <p>14 vetting.</p> <p>15 Q. But not guardrails in the sense</p> <p>16 of header bidding, right?</p> <p>17 A. Guardrails with respect to just</p> <p>18 entry into the bidding process.</p> <p>19 Q. But you would agree that those</p> <p>20 statistics from 2013 are not within the context</p> <p>21 of header bidding?</p> <p>22 A. It's guardrails with respect to</p> <p>23 entry into the bidding process and the lack of</p> <p>24 guardrails introduced an uptick in malvertising,</p> <p>25 which is what -- is the security risk that we're</p> |
| Page 203 | Page 205 |
| <p>1 actually produced positive results and that</p> <p>2 there are multiple articles that you can find</p> <p>3 documenting how -- when the network put revenue</p> <p>4 over quality, it generated -- it created risk.</p> <p>5 Q. But the statistic that you cite</p> <p>6 in that paragraph, in paragraph 73, is from</p> <p>7 2013, right?</p> <p>8 A. Later in the paragraph you're</p> <p>9 referring to "In 2013 Google's research noted</p> <p>10 that spam click rate through AWBId varied</p> <p>11 anywhere from from ten to 70%, while AdX</p> <p>12 remained at seven to 8%," is that what you are</p> <p>13 referring to?</p> <p>14 Q. Well, you just said that based</p> <p>15 off of my professional experience, totality of</p> <p>16 data that I reviewed and the statistics I say</p> <p>17 later in the paragraph, are those the statistics</p> <p>18 you are talking about?</p> <p>19 MS. MAUSER: Object to form,</p> <p>20 mischaracterizes his testimony.</p> <p>21 THE WITNESS: That's what I said.</p> <p>22 BY MR. FREEMAN:</p> <p>23 Q. You said statistics further in</p> <p>24 the paragraph highlight that by implementing the</p> <p>25 vetting program actually produced positive</p> | <p>1 trying to mitigate.</p> <p>2 Q. But those statistics came from</p> <p>3 research before header bidding was widely</p> <p>4 adopted?</p> <p>5 A. We are speaking about guardrails,</p> <p>6 though. Header bidding is the framework, and it</p> <p>7 is the implementation of that framework. And</p> <p>8 there are other data-points or other factors</p> <p>9 that you can implement with the header bidding</p> <p>10 framework. And in this case I'm referring to</p> <p>11 guardrails, guardrails in which entry into the</p> <p>12 bidding process is vetted. There are others</p> <p>13 that were adopted later on due to the evolution</p> <p>14 of the technologies.</p> <p>15 What I'm highlighting here is</p> <p>16 that in 2013, Google did research and allowed</p> <p>17 nonvetted players to participate in their bids.</p> <p>18 And the click rate through AWBId varied from 10</p> <p>19 to 20%, while AdX remained from seven to 8%</p> <p>20 highlighting that the guardrails helped. And</p> <p>21 that is another parameter, another data point</p> <p>22 that should be factored.</p> <p>23 Q. But, again, guardrails, not in</p> <p>24 the context of header bidding, right?</p> <p>25 A. Guardrails in the context of the</p> |

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1 bidding process, digital advertising ecosystem.
2 There's a lot involved, and this is -- this is
3 an important data point that speaks to it.
4 Q. Did you review the document, the
5 internal Google document that cites the research
6 finding ten to 70% of a spam click rate?
7 A. Seventy-nine?
8 Q. That's correct.
9 A. Yeah, I'm sure I did if I
10 footnoted it.
11 Q. And did you see the comment that
12 says that the ten to 70%, that this was before
13 blacklisting was applied, and 70% end was before
14 blacklisting. Its 10% or so nowadays?
15 A. Do you want to show me the
16 document?
17 Q. Do you remember seeing that?
18 A. Again, I mean, we can keep going
19 back to this memory test. I'm sure I saw it,
20 and I'm sure I read it, but we can have a better
21 discussion if you show it to me.
22 MR. FREEMAN: Okay. I'll mark
23 Ferrante-Lit Exhibit 5.
24 (Document marked for
25 identification as Ferrante-Lit

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1 Deposition Exhibit No. 5.)
2 THE WITNESS: I do remember
3 seeing this document.
4 BY MR. FREEMAN:

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10 Q. What is your understanding of
11 what AWBID is?
12 A. AWBID was a pilot where they --
13 the precursor to some of the technologies that
14 have now evolved into open bidding.
15 Q. Did you see any research after
16 2013 showing the spam click rate for AdX?
17 A. I can't recall as I sit here
18 right now.
19 Q. If you would have seen something
20 like that, would that have been something you
21 would have included in your report?
22 A. Possibly.
23 Q. So what type of statistical
24 comparison did you do about the spam click rate
25 for header bidding as that compares to the spam

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1 click rate for AdX?
2 A. I'm sorry, can you repeat the
3 question?
4 Q. Did you compare the spam click
5 rate for header bidding to the spam click rate
6 for AdX?
7 A. I did not.
8 Q. I want to move, then, to the part
9 where you discuss noise in header bidding.
10 A. Okay.
11 Q. And specifically starting on
12 paragraph 70 on page 28, you cite to the IAB
13 Tech Lab Chief.
14 Do you see that in the second to
15 last sentence?
16 A. I do.
17 Q. With the tech lab chief saying,
18 quote, "Header bidding led to publishers being
19 more --" going on to the next page --
20 "promiscuous in their demand partnerships and
21 more willing to turn on demand partners, which
22 made it easier for bad actors to hide amongst
23 all the activity."
24 Do you see that?
25 A. I do see that.

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1 Q. And then you cite to a particular
2 article which has that quote, right?
3 A. Yes.
4 MS. MAUSER: So I'm going to show
5 you what's been marked as Ferrante-Lit
6 Exhibit -- this is 6, right? Six.
7 THE WITNESS: Correct.
8 (Document marked for
9 identification as Ferrante-Lit
10 Deposition Exhibit No. 6.)
11 THE WITNESS: And Michael,
12 when -- like a three-minute warning,
13 five-minute warning?
14 MR. FREEMAN: Let's do it now
15 before I -- we can go off the record.
16 THE VIDEOGRAPHER: Off the record
17 3:38.
18 (Brief recess.)
19 THE VIDEOGRAPHER: On the record
20 at 3:56.
21 BY MR. FREEMAN:
22 Q. During our last session you had
23 talked about a field test that you did about
24 header bidding in data leakage, right?
25 A. Correct.

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1 Q. I just want to a little bit put
2 some more color on that in terms of what website
3 did you visit to conduct this field test?
4 A. So you have to appreciate, again,
5 this is work that I do every single day in
6 private practice. And as I told you earlier, I
7 was literally born and raised working in this
8 space, programming, the internet, security
9 networking. So we talk about header bidding,
10 and when you take bits -- you take the pieces
11 that make up header bidding, and you take them
12 apart, you understand the technologies involved,
13 okay. And so it's very easy to -- to read about
14 it and to understand it as a technology expert.
15 Again, this is what I do every single day.
16 And so when it comes to
17 conducting a field test, it's as simple as okay,
18 we have a website, we are -- user data is being
19 collected as the user visits the website, okay,
20 and how is that data being transferred? Oh,
21 header bidding used, clear text communications.
22 Clear text communications is not
23 protected and is very much susceptible to
24 eavesdrop collection, or as we said before, data
25 leakage. So -- so it's very easy for me and the

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| <p style="text-align: right;">Page 214</p> <p>1 team to do this as we conducted our</p> <p>2 investigative work.</p> <p>3 Q. I want, though, to understand</p> <p>4 overall, but specifically for the field test</p> <p>5 that you had previously talked about in this</p> <p>6 case, what website did you go to to conduct it?</p> <p>7 A. You know, as I sit here right</p> <p>8 now, I don't recall. But I can tell you that it</p> <p>9 was an implementation of header bidding in which</p> <p>10 the security gaps were present.</p> <p>11 And, again, those security gaps</p> <p>12 are nothing new to me based on my experience in</p> <p>13 private practice, my time in the government, and</p> <p>14 they're not new concepts. I mean, that's</p> <p>15 something important to know. These security</p> <p>16 gaps that existed in header bidding were not new</p> <p>17 concepts. I mean, candidly that's why they've</p> <p>18 expired or been retired, and the industry has</p> <p>19 evolved to newer, more enhanced, more secure</p> <p>20 protocols.</p> <p>21 So as I sit before you as an</p> <p>22 expert in this case, I'm not telling you</p> <p>23 anything unique or novel for the industry. This</p> <p>24 is well known and well-documented. But I, of</p> <p>25 course, in preparation in conducting this work,</p> | <p style="text-align: right;">Page 216</p> <p>1 technologies for the U.S. government, going into</p> <p>2 private practice and aiding organizations as</p> <p>3 they are either exploited by malicious actors</p> <p>4 themselves, or the U.S. government is hammering</p> <p>5 them with some sort of regulatory action because</p> <p>6 they didn't do it correctly the first time.</p> <p>7 I built an entire career on this</p> <p>8 exact subject matter. So just because an</p> <p>9 anonymous source was cited in Digiday, doesn't</p> <p>10 mean that it's not true. I'm telling you as</p> <p>11 your expert this is true. Clear text</p> <p>12 communications, for example, is susceptible to</p> <p>13 eavesdropping. Sniffing packets on a wire is</p> <p>14 putting user data at risk. Sending user data to</p> <p>15 potential bidders and looking at it</p> <p>16 holistically, some of those bidders may be</p> <p>17 hiding in plain site, not interested in placing</p> <p>18 a single bid can still collect that data. That</p> <p>19 is risk that was introduced by header bidding.</p> <p>20 I can cite work I've done in</p> <p>21 private practice where a big tech company was</p> <p>22 providing lots of data to their developers. And</p> <p>23 a lot of that data was collected and misused.</p> <p>24 That big tech company got in a lot of trouble by</p> <p>25 the U.S. government. And in this case looking</p> |
| <p style="text-align: right;">Page 215</p> <p>1 I wanted to see it.</p> <p>2 Q. You said now a few times -- let's</p> <p>3 talk specifically about data leakage in header</p> <p>4 bidding that is well-documented.</p> <p>5 Where are you referring to data</p> <p>6 leakage being reported in header bidding?</p> <p>7 A. I'm telling you as the expert in</p> <p>8 this case the technologies implemented, clear</p> <p>9 text communication, it is well-documented</p> <p>10 throughout the internet. Everybody knows that</p> <p>11 clear text communications are easily susceptible</p> <p>12 to eavesdrop collection, sniffing packets on the</p> <p>13 wire. It is why the credit card industry moved</p> <p>14 to encrypted communications. I mean, it's very</p> <p>15 well-documented.</p> <p>16 What I've done in my report, and</p> <p>17 we've gone back and forth on this, is I've cited</p> <p>18 some articles to just highlight that it's very</p> <p>19 well talked about by laypeople, okay, we're</p> <p>20 talking VP of programmatic advertising in the</p> <p>21 Digiday report, okay.</p> <p>22 I'm sitting here before you as a</p> <p>23 technical expert, someone who has spent their</p> <p>24 entire career working in this space,</p> <p>25 investigating crimes, exploiting these very</p> | <p style="text-align: right;">Page 217</p> <p>1 at the header bidding technologies, I see</p> <p>2 parallels. And for me to be sitting before you</p> <p>3 today as an expert for Google and comparing</p> <p>4 header bidding to open bidding, I mean, there</p> <p>5 have just been dramatic security enhancements</p> <p>6 that have actually been adopted by the industry</p> <p>7 and are widely used today.</p> <p>8 Q. Yeah, there's a lot to unpack</p> <p>9 there.</p> <p>10 So when you say -- getting back</p> <p>11 to it's been well-documented that there's data</p> <p>12 leakage with the use of header bidding, are you</p> <p>13 aware of a peer-reviewed academic journal that</p> <p>14 concludes that?</p> <p>15 A. I don't need one. It's well</p> <p>16 known that clear text communications are</p> <p>17 susceptible to collection.</p> <p>18 Q. Is there --</p> <p>19 A. Header bidding utilizes clear</p> <p>20 text communication in some instances.</p> <p>21 Q. Is there a peer-reviewed academic</p> <p>22 journal that says clear text communications is</p> <p>23 susceptible to collection?</p> <p>24 A. Of course there are.</p> <p>25 Q. What are they?</p> |

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|---|--|
| <p style="text-align: right;">Page 218</p> <p>1 A. There are thousands. It's</p> <p>2 well-documented. Clear text communications on</p> <p>3 the internet are absolutely susceptible to</p> <p>4 communication.</p> <p>5 Q. Can you name me one of the</p> <p>6 thousands?</p> <p>7 A. Oh, that's -- that's an unfair</p> <p>8 question. That's like you asking -- that's an</p> <p>9 unfair question, and you know it is.</p> <p>10 Q. Can you name one of them, one of</p> <p>11 the thousands of well-documented peer-reviewed</p> <p>12 academic journals that says clear text</p> <p>13 communication is susceptible to collection?</p> <p>14 A. I -- Triply, I'm sure, has</p> <p>15 dozens, if not hundreds, of peer-reviewed</p> <p>16 academic articles on this. You are talking</p> <p>17 about a concept on the internet that has existed</p> <p>18 for what, 25, 30 years. Of course it's</p> <p>19 well-documented that clear text communication is</p> <p>20 susceptible to eavesdropping. Why do you think</p> <p>21 the credit card industry moved to encrypted</p> <p>22 communications? Why do you think the U.S.</p> <p>23 government uses encrypted communications to</p> <p>24 communicate sensitive data? Because clear text</p> <p>25 communication is susceptible to collection and</p> | <p style="text-align: right;">Page 220</p> <p>1 expert in digital advertising technology?</p> <p>2 MS. MAUSER: Object to form.</p> <p>3 THE WITNESS: I consider myself</p> <p>4 an expert in security and in this case</p> <p>5 how it is applied in the digital</p> <p>6 advertising space.</p> <p>7 BY MR. FREEMAN:</p> <p>8 Q. Do you consider yourself an</p> <p>9 expert in digital advertising technology?</p> <p>10 MS. MAUSER: Object to form.</p> <p>11 THE WITNESS: I consider myself</p> <p>12 an expert in -- a security expert in how</p> <p>13 it is applied in this particular case.</p> <p>14 BY MR. FREEMAN:</p> <p>15 Q. So that answer to that is no, you</p> <p>16 do not consider yourself an expert in digital</p> <p>17 advertising technology, right?</p> <p>18 MS. MAUSER: Object to form.</p> <p>19 THE WITNESS: In the security</p> <p>20 aspects of digital advertising.</p> <p>21 BY MR. FREEMAN:</p> <p>22 Q. I want to go back to kind of</p> <p>23 where we broke before taking our last break</p> <p>24 about noise and specifically on paragraph 70 on</p> <p>25 page 28 of your report.</p> |
| <p style="text-align: right;">Page 219</p> <p>1 eavesdropping. I mean, this is like the most</p> <p>2 basic concept. So you are asking me for a</p> <p>3 peer-reviewed article, like I don't have one off</p> <p>4 the top of my head, but I assure you there are</p> <p>5 thousands of them documenting that.</p> <p>6 Q. Nor did you cite one in your</p> <p>7 report?</p> <p>8 A. I don't need to. I don't need to</p> <p>9 because I am an expert who has worked in this</p> <p>10 industry for 30-plus years.</p> <p>11 Q. You are an expert in ad</p> <p>12 technology?</p> <p>13 A. I'm an expert in internet,</p> <p>14 security, networking. And what I'm telling you</p> <p>15 is the technologies utilized to facilitate ad</p> <p>16 technologies are basic, basic common, commonly</p> <p>17 used internet technologies. They're the same</p> <p>18 protocols, TCP/IP, right. It's the same protocol</p> <p>19 that is used to push data from a website to, for</p> <p>20 example, an ad exchange. TCP/IP. TCP/IP</p> <p>21 scrambles the data, moves the data, reconfigures</p> <p>22 the data, and then on the other end they read</p> <p>23 it. That data, if not encrypted is susceptible</p> <p>24 to eavesdropping.</p> <p>25 Q. Do you consider yourself an</p> | <p style="text-align: right;">Page 221</p> <p>1 If you remember, we had went over</p> <p>2 the quote from IAB tech lab chief?</p> <p>3 A. Yes, I remember that.</p> <p>4 Q. All right. And then I showed</p> <p>5 you, and I think now you still have in front of</p> <p>6 you, what's been marked as Ferrante Litigation</p> <p>7 Exhibit Number 6.</p> <p>8 Do you have?</p> <p>9 A. I do see that, yes.</p> <p>10 Q. Just so we're clear, is</p> <p>11 Ferrante-Lit investigation Exhibit Number 6 the</p> <p>12 document where you got the quote that's cited in</p> <p>13 paragraph 70?</p> <p>14 A. You're asking me that?</p> <p>15 Q. Correct.</p> <p>16 A. If I cited it, I'm assuming so,</p> <p>17 but --</p> <p>18 Q. Here, I'll help you out.</p> <p>19 A. Let's just confirm it.</p> <p>20 Q. Go to page 2, 2 of 9.</p> <p>21 A. Okay.</p> <p>22 Q. Right below where there's a blank</p> <p>23 advertisement, do you see the quote there?</p> <p>24 A. I do see it now.</p> <p>25 Q. Okay. So is it fair that</p> |

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| <p style="text-align: right;">Page 222</p> <p>1 Ferrante Litigation Exhibit Number 6 is a source 2 of the quote that you put into your report? 3 A. Yes. 4 Q. Within this document, Litigation 5 Exhibit 6, do you see any statistical data to 6 support the claim that header bidding led to 7 publishers being more promiscuous in their 8 demand partnerships? 9 A. What's your question? 10 Q. Is there any statistical data 11 that supports the claim that you quoted that 12 header bidding led to publishers being more 13 promiscuous in their demand partnerships? 14 A. So, I'm sorry. As I was reading 15 I was distracted. Can you repeat your question? 16 Q. Sure. 17 Is there any statistical data 18 cited in government -- or Plaintiffs Exhibit 6 19 that supports the claim that you quoted which 20 stated that header bidding led to publishers 21 being more promiscuous in their demand 22 partnerships? 23 A. So this is a piece -- so in this 24 particular case, what I'm talking about here is, 25 again, speaking about the prevent ad fraud</p> | <p style="text-align: right;">Page 224</p> <p>1 would have been mitigated if that security 2 enhancement was implemented prior. 3 Q. But I'm asking you: did you 4 review any statistical data that supports other 5 leaders, quote, "that header bidding led to 6 publishers being more promiscuous in their 7 demand partnerships"? 8 A. I didn't need to. It was 9 well-documented in the industry. This is one of 10 many cites that I read that talks about how 11 header bidding put revenue over quality, and 12 more and more users were able to get involved in 13 the bidding process, which created risk. 14 Q. Is there academic peer-reviewed 15 articles that support the idea that header 16 bidding led to publishers being more promiscuous 17 in their demand partnerships? 18 A. As I sit here right now, I can't 19 answer that. 20 Q. So when you say it's 21 well-documented, it's well-documented where? 22 A. In the data that I reviewed. 23 Q. What data did you review? 24 A. I've cited it in this, in this 25 report.</p> |
| <p style="text-align: right;">Page 223</p> <p>1 amongst the noise, right, the lack of 2 guardrails. What I'm talking about in citing 3 this report is other leaders in the space 4 talking -- stating their views about how header 5 bidding led to publishers being more promiscuous 6 in their demand partnerships and willing to turn 7 on more demand partners, which made it easier 8 for bad actors to hide in plain site. 9 And what I'm talking about is how 10 the industry was trending in a direction that 11 was creating more risk, and then the industry 12 responding with additional security enhancements 13 to mitigate that risk. And so I speak about -- 14 I quote the gentleman in paragraph 70. I talk 15 about the noise and how just the sheer volume 16 can allow for malicious actors to hide in plain 17 site. 18 And then I speak to the fact that 19 the industry was migrating to newer technologies 20 to help prevent that. 21 And so if you're asking me for a 22 statistic, we can look further down in page 3 of 23 9 in the article where it just talks about how 24 the adoption of the new technology is 80% of 25 risk in a certain particular malicious actor</p> | <p style="text-align: right;">Page 225</p> <p>1 Q. Are you talking about Plaintiffs 2 Exhibit 6? 3 A. Six, it was also noted in 4 Plaintiffs Exhibit 4 and through the course of 5 migration with my team. I mean, again, I've 6 cited this piece, just so I could cite this 7 piece, and you have something to look at. But 8 it was very clear. And if you think about it in 9 totality, when it comes to conducting these 10 operations, in totality, in addition to having 11 technical controls, having policy controls is 12 helpful in mitigating risk. And through the 13 course of my work every single day today, that 14 is exactly the advice that I give my clients. 15 And so when I came across this 16 data point and saw others commenting on it and 17 could see the effects of it, I thought it was a 18 very interesting and worthy data point for my 19 report. 20 Q. We're talking about data point. 21 You're talking about an article published by 22 Trade Press, right? 23 A. That is the cite -- that is the 24 article which I cited here, but there was 25 overwhelming material that I read.</p> |

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| <p style="text-align: right;">Page 226</p> <p>1 Q. That were not Trade Press?</p> <p>2 A. Just other sources.</p> <p>3 Q. Like what?</p> <p>4 A. Again, through the course of my</p> <p>5 investigation. I mean, I've cited it here, but</p> <p>6 I'm not understanding what your question is.</p> <p>7 Q. I'm asking you: did you see</p> <p>8 anything other than Trade Press articles that</p> <p>9 support the idea that header bidding led to</p> <p>10 publishers being more promiscuous in their</p> <p>11 demand partnerships, other than Trade Press</p> <p>12 articles?</p> <p>13 A. The Trade Press article that</p> <p>14 cites the IAB tech lab CTO, I mean, this is a</p> <p>15 reputable organization, and he is quoted in this</p> <p>16 article. The source of the article, I mean,</p> <p>17 AdExchanger, but he is the IAB tech lab CTO.</p> <p>18 Q. Isn't it possible to be misquoted</p> <p>19 in a Trade Press article?</p> <p>20 A. I'm sure it is.</p> <p>21 Q. So what did you do to verify the</p> <p>22 quote that you put in to your report that was</p> <p>23 actually accurate?</p> <p>24 A. Well, like I said, I saw other</p> <p>25 instances of it. Let me flip through Exhibit 4</p> | <p style="text-align: right;">Page 228</p> <p>1 question?</p> <p>2 Q. Did you review anything other</p> <p>3 than articles published on the open internet</p> <p>4 that supported the idea that header bidding led</p> <p>5 to publishers being more promiscuous in their</p> <p>6 demand partnerships?</p> <p>7 A. Yes, in what I used was my</p> <p>8 professional experience in this industry. We</p> <p>9 keep to coming back to this, but I do this work</p> <p>10 every single day, looking at the totality of</p> <p>11 information, understanding that through the</p> <p>12 header bidding process it was well known in the</p> <p>13 industry that they open the flood gates and</p> <p>14 allowed revenues to take priority over quality.</p> <p>15 And in my expert opinion, in my</p> <p>16 expert work that I've been doing my entire</p> <p>17 career that I built a career on, I view that as</p> <p>18 risk. That's what I do. I evaluate risk. My</p> <p>19 clients hired me to evaluate risk. I evaluated</p> <p>20 that risk for the United States Government. And</p> <p>21 I am telling you that that generated risk, and</p> <p>22 that risk is easily mitigated, easily mitigated.</p> <p>23 I don't need data to prove it, but easily</p> <p>24 mitigated by having a proper know-your-customer</p> <p>25 program in place, which is well adopted in</p> |
| <p style="text-align: right;">Page 227</p> <p>1 so I can point it out to you.</p> <p>2 Q. Exhibit 4 is also Trade Press,</p> <p>3 right?</p> <p>4 A. Why do you keep saying "Trade</p> <p>5 Press"? This is AdExchanger, is the source</p> <p>6 here. This is Digiday.</p> <p>7 Q. You are not familiar with the</p> <p>8 phrase "Trade Press"?</p> <p>9 A. The open internet?</p> <p>10 Q. Right. So Exhibit 6 and Exhibit</p> <p>11 4 are just articles published on the open</p> <p>12 internet, right?</p> <p>13 A. But there are articles citing</p> <p>14 experts in the industry. They're citing people</p> <p>15 who work in this industry.</p> <p>16 Q. Exhibit 4 says on -- "ad fraud</p> <p>17 researcher who wants anonymity"?</p> <p>18 A. In that one particular quote.</p> <p>19 Q. So my question is, go back to it,</p> <p>20 is: have you reviewed anything other than</p> <p>21 articles published on the open internet that</p> <p>22 support the idea that header bidding let</p> <p>23 publishers -- led publishers be more promiscuous</p> <p>24 in their demand partnerships?</p> <p>25 A. Did I review -- what was your</p> | <p style="text-align: right;">Page 229</p> <p>1 various industries, know-your-customer mentality</p> <p>2 or program at an organization and provide --</p> <p>3 proves positive results.</p> <p>4 And what I've done here is cite</p> <p>5 articles of different -- of leaders in the</p> <p>6 industry that reinforce my point.</p> <p>7 Q. Why did you say that you cited to</p> <p>8 the article, which is Litigation Exhibit 6, just</p> <p>9 so I could cite this piece and you have</p> <p>10 something to look at?</p> <p>11 A. It's just -- I'm writing it --</p> <p>12 I'm a technologist, okay, I talk ones and zeros.</p> <p>13 I'm writing an expert report for a courtroom so</p> <p>14 it could be understood. And I'm citing, again,</p> <p>15 pieces of information that if someone reads the</p> <p>16 report and they look at the citing, it makes</p> <p>17 sense to them.</p> <p>18 Q. How much of the 3ve -- just so</p> <p>19 we're clear for the record, 3ve spelled the</p> <p>20 number 3-V-E, right?</p> <p>21 A. Correct.</p> <p>22 Q. How much of the 3ve's actions</p> <p>23 occurred with publishers using header bidding?</p> <p>24 A. You know, as I sit here right</p> <p>25 now, I'm not sure I can answer that question.</p> |

| Page 230 | Page 232 |
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| <p>1 Q. What specific publishers saw an</p> <p>2 increase in domain spoofing as a result of using</p> <p>3 header bidding?</p> <p>4 A. I mean, it was a well known,</p> <p>5 well-documented risk so much so that the entire</p> <p>6 industry adopted ads.txt. So, again, I don't</p> <p>7 want to talk in absolutes, but I will just say</p> <p>8 that it was well known and well-documented, and</p> <p>9 I've highlighted that risk.</p> <p>10 Q. I'm asking you what specific</p> <p>11 publisher saw an increase in domain spoofing as</p> <p>12 a result of using header bidding?</p> <p>13 A. As I sit here right now, I can't</p> <p>14 answer that. But I can say that it was a</p> <p>15 well-known security gap in the industry to the</p> <p>16 point that it was widely adopted after I've</p> <p>17 because I've highlighted the significant risk</p> <p>18 that existed.</p> <p>19 Q. I think you talked a little bit</p> <p>20 about it already or mentioned it at times in</p> <p>21 terms of ads like A-D-S, period, T-X-T?</p> <p>22 A. Ads.txt, correct.</p> <p>23 Q. What is that?</p> <p>24 A. It's comparable to the SPF record</p> <p>25 in e-mail.</p> | <p>1 framework, a framework that's widely adopted.</p> <p>2 Header bidding exists today in enhanced formats</p> <p>3 that have made it more secure.</p> <p>4 I think what's important to note</p> <p>5 is that organizations have adopted header</p> <p>6 bidding and implemented it in their own unique</p> <p>7 way that's best for them.</p> <p>8 Q. So if the use of header bidding</p> <p>9 continues to grow, would you suspect that the</p> <p>10 amount of malvertising or ad fraud would</p> <p>11 increase as well?</p> <p>12 A. No, because header bidding as it</p> <p>13 has grown in adoption and adopted by others in</p> <p>14 the industry, it has evolved significantly since</p> <p>15 it was introduced in 2014, 2015. There have</p> <p>16 been significant security enhancements.</p> <p>17 The risks that I spoke to you</p> <p>18 about last time, a lot of them have been adopted</p> <p>19 and implemented by the various users of header</p> <p>20 bidding today. So header bidding is widely</p> <p>21 used. Amazon TAM has their version of header</p> <p>22 bidding; Prebid has their own open source freely</p> <p>23 available, publicly available version of header</p> <p>24 bidding that lots of publishers will utilize and</p> <p>25 tweak to their own liking.</p> |
| Page 231 | Page 233 |
| <p>1 Q. Can a publisher use ads.txt when</p> <p>2 using header bidding?</p> <p>3 A. Yes, of course.</p> <p>4 Q. So that mitigation tool is not</p> <p>5 unique to any particular publisher ad server?</p> <p>6 A. No, it's meant to be implemented</p> <p>7 on the actual website itself. As I said</p> <p>8 earlier, think of it as SPF technology for</p> <p>9 e-mail, sender policy framework, where you get</p> <p>10 calls and validate the domain, the account, the</p> <p>11 relationship and can actually validate that in</p> <p>12 real time to make sure that you do, indeed, want</p> <p>13 to speak to them or allow them to take part in</p> <p>14 that process more appropriately.</p> <p>15 Q. Since being widely adopted in</p> <p>16 2014 and 2015, do you know whether the use of</p> <p>17 header bidding continues to grow?</p> <p>18 MS. MAUSER: Object to form</p> <p>19 foundation.</p> <p>20 THE WITNESS: Okay. Can you</p> <p>21 reask the question?</p> <p>22 BY MR. FREEMAN:</p> <p>23 Q. So basically since 2014, do more</p> <p>24 publishers continue to use header bidding?</p> <p>25 A. Sure. Header bidding is a</p> | <p>1 I mean, that's the reality of</p> <p>2 this industry is that this code exists. It's</p> <p>3 evolved over years as with many things on the</p> <p>4 internet. Security has been baked in, and</p> <p>5 people continue to use it and evolve and evolve</p> <p>6 with it.</p> <p>7 Q. So then are you saying that the</p> <p>8 rate of data leakage with the use of header</p> <p>9 bidding has gone down in recent years?</p> <p>10 A. As security enhancements in</p> <p>11 header bidding have evolved and been</p> <p>12 implemented, been, first of all, innovative --</p> <p>13 innovated, adopted and then implemented, the</p> <p>14 security enhancements, specific data leakage,</p> <p>15 while I cannot speak, you know, definitively</p> <p>16 across the industry, has gone down as people</p> <p>17 have implemented the evolved version of header</p> <p>18 bidding. It is the industry. It is a</p> <p>19 cat-and-mouse game.</p> <p>20 As I said earlier, security</p> <p>21 adversaries sit home and they spend all day</p> <p>22 every day looking to exploit technologies as</p> <p>23 innovators, leaders invest time and energy and</p> <p>24 collaborate with peers in the industry to</p> <p>25 mitigate those risks. An entire profession has</p> |

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| <p style="text-align: right;">Page 234</p> <p>1 been built on the latter part, candidly on the</p> <p>2 former part as well, if I'm being honest.</p> <p>3 Q. Are you familiar with a Google</p> <p>4 project called YAvin, spelled Y-A-V-I-N?</p> <p>5 A. As I sit here right now, I can't</p> <p>6 recall.</p> <p>7 Q. Are you familiar with AdXDirect?</p> <p>8 A. As I sit here right now, I can't</p> <p>9 recall.</p> <p>10 Q. So you're not opining whether</p> <p>11 those projects increased or decreased security?</p> <p>12 A. Again, if there's a document you</p> <p>13 want to show me, I'm happy to look at it, but I</p> <p>14 can't recall how I know those.</p> <p>15 Q. But I'm asking whether you are</p> <p>16 opining about those particular projects and its</p> <p>17 effect on cyber security?</p> <p>18 A. And, again, I'm responding by</p> <p>19 saying I can't recall where I read that or how I</p> <p>20 would know those names as I sit here right now.</p> <p>21 I know that Google has taken</p> <p>22 considerable steps in their open bidding</p> <p>23 framework which, you know, the features of open</p> <p>24 bidding, which have migrated and been adopted by</p> <p>25 other players in the industry and implemented in</p> | <p style="text-align: right;">Page 236</p> <p>1 industry and applied them in the header bidding</p> <p>2 framework.</p> <p>3 Q. Did you do any sort of field test</p> <p>4 with open bidding?</p> <p>5 A. Yes.</p> <p>6 Q. When did you do open bidding</p> <p>7 field testing?</p> <p>8 A. Well, again, back to what I had</p> <p>9 said earlier, knowing the protocols in place,</p> <p>10 for example, encrypted communications, I know</p> <p>11 encrypted communications cannot be intercepted.</p> <p>12 We talked about that earlier. So conducting a</p> <p>13 field test to ensure that you cannot capture</p> <p>14 encrypted communications, that's easy.</p> <p>15 The vetting of the program, of</p> <p>16 course. I was not able to do that, to test the</p> <p>17 vetting.</p> <p>18 Ads.txt, I did see in plain site.</p> <p>19 That's very easy to do. And then the data</p> <p>20 leakage on the server side, I wasn't able to</p> <p>21 test, of course, because I didn't have access to</p> <p>22 that server side.</p> <p>23 Q. Did you do a field test as</p> <p>24 preparation for your report here?</p> <p>25 A. On open bidding --</p> |
| <p style="text-align: right;">Page 235</p> <p>1 header bidding.</p> <p>2 Q. So you talked about open bidding.</p> <p>3 What is open bidding?</p> <p>4 A. Open bidding is a framework</p> <p>5 developed by Google that, you know, closed a lot</p> <p>6 of the gaps and mitigated a lot of the risks</p> <p>7 that I spoke about earlier today. It did away</p> <p>8 with man-in-the-middle attacks on the wire. The</p> <p>9 sensitive user data was passed by encrypted</p> <p>10 communications. It did away with the listening</p> <p>11 in plain site to nonlegitimate players in the</p> <p>12 bidding process. It did away with the ability</p> <p>13 for malicious actors to buy access to users'</p> <p>14 machines. It spearheaded the effort with</p> <p>15 partners in the industry to come up with the ads</p> <p>16 technology, ads.txt framework. It created a</p> <p>17 know-your-customer program, a vetting process.</p> <p>18 And then, again, with those technologies, it</p> <p>19 helped stop the essential competitive intel</p> <p>20 collected on peers in the bidding process.</p> <p>21 So, I mean, those are six points</p> <p>22 that open bidding and Google identified and as</p> <p>23 innovators of the space, in the space, worked to</p> <p>24 develop -- talked about these features and then</p> <p>25 were very quickly adopted by others in the</p> | <p style="text-align: right;">Page 237</p> <p>1 Q. Yeah, open bidding?</p> <p>2 A. Yeah, I just walked you through</p> <p>3 it. Again, these are basic internet protocols.</p> <p>4 Q. What I'm asking, though, it was</p> <p>5 after you were retained by Google on this</p> <p>6 particular case that you were conducted this</p> <p>7 field test?</p> <p>8 A. Sure. In this particular case</p> <p>9 with respect to let's say ads.txt and encrypted</p> <p>10 communications. But I will highlight with the</p> <p>11 exception of ads.txt that sort of testing on</p> <p>12 encrypted communications is what we do every</p> <p>13 day. So -- but, yes, after being retained,</p> <p>14 looking at -- sniffing the wire for technical</p> <p>15 information, both encrypted and unencrypted is</p> <p>16 very standard in the industry and something that</p> <p>17 not only we did for this. But candidly, I mean,</p> <p>18 we're working on, I would say, a dozen cases</p> <p>19 right now related to ads technology, ad</p> <p>20 technology that is -- that is collecting data on</p> <p>21 users with or without their consent and then</p> <p>22 sending it somewhere. So we're doing a lot of</p> <p>23 test -- a lot of work in that space right now.</p> <p>24 That's why when I talked earlier</p> <p>25 about my predictions piece, when I talked about</p> |

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| <p style="text-align: right;">Page 238</p> <p>1 government -- government regulations and</p> <p>2 third-party risk, that's exactly where that's</p> <p>3 coming from. You'd be surprised how many</p> <p>4 publishers' websites implement different</p> <p>5 technologies on their site that they just don't</p> <p>6 understand how they work. It's actually a</p> <p>7 really big trend right now, third-party risk.</p> <p>8 Q. How many field tests did you</p> <p>9 conduct on open bidding? I'm sorry?</p> <p>10 A. I wanted to make sure you were</p> <p>11 able to read your note.</p> <p>12 Q. I can.</p> <p>13 A. Okay. Again, the technologies</p> <p>14 are not -- they're trivial. I mean, you are</p> <p>15 talking about encrypted communication. So how</p> <p>16 many tests have I run on the encrypted</p> <p>17 communications used in open bidding? I've done</p> <p>18 thousands of them because that's what I do in my</p> <p>19 industry. That's like -- that's like asking</p> <p>20 Tiger Woods how many golf balls he hits in his</p> <p>21 lifetime, okay? That's what I do. And in this</p> <p>22 particular case, once retained, of course, we</p> <p>23 looked and we said, okay, if header bidding is</p> <p>24 clear text, let's see the clear text, and now</p> <p>25 let's look at encrypted coms and make sure it is</p> | <p style="text-align: right;">Page 240</p> <p>1 bidding, of course we looked at the</p> <p>2 communication types; clear text versus</p> <p>3 encrypted. And so we demonstrated to ourselves</p> <p>4 like, look, here's the difference between the</p> <p>5 two. So all we needed as was one in this</p> <p>6 particular case because it confirmed what we</p> <p>7 already knew. And if I'm being honest, we did</p> <p>8 it to the benefit of the younger staff.</p> <p>9 Q. Did you see any documents about</p> <p>10 the detection rate of malvertising or ad fraud</p> <p>11 for ads served through open or exchange bidding</p> <p>12 in 2016?</p> <p>13 A. I'm sorry, can you -- can you</p> <p>14 repeat that question?</p> <p>15 Q. Sure.</p> <p>16 What was the detection rate of</p> <p>17 malvertising or ad fraud for ads served through</p> <p>18 open or exchange bidding in 2016?</p> <p>19 MS. MAUSER: Object to form.</p> <p>20 THE WITNESS: When you say "open</p> <p>21 or exchange bidding," do you mean open</p> <p>22 or header bidding?</p> <p>23 BY MR. FREEMAN:</p> <p>24 Q. No, open and exchange bidding are</p> <p>25 synonymous with Google; would you agree with</p> |
| <p style="text-align: right;">Page 239</p> <p>1 what it is. And so we did that.</p> <p>2 The ads.txt was actually quite</p> <p>3 easy. I mean, I can -- it's super easy to see</p> <p>4 and to understand how it works. So to see the</p> <p>5 implementation of ads.txt is super simple.</p> <p>6 Q. I want to be clear, when you say</p> <p>7 thousands of fields tests, I'm specifically</p> <p>8 asking about field tests with open bidding.</p> <p>9 Are you saying you did thousands</p> <p>10 of field tests on open bidding?</p> <p>11 A. No, you're -- maybe I'm not doing</p> <p>12 a good job of explaining myself.</p> <p>13 Opening bidding is a framework</p> <p>14 that uses secure communications. And what I did</p> <p>15 as an expert in the industry and know how</p> <p>16 communications work, whether it's clear text or</p> <p>17 encrypted communications, I, through the course</p> <p>18 of my career, have conducted thousands of tests,</p> <p>19 man-in-the-middle tests, packet sniffing tests</p> <p>20 on encrypted communications, thousands, because</p> <p>21 that's what I do. I mean, that's my job. I did</p> <p>22 it for the government; I do it here in private</p> <p>23 practice.</p> <p>24 Once retained by Google and</p> <p>25 investigating header bidding versus open</p> | <p style="text-align: right;">Page 241</p> <p>1 that?</p> <p>2 A. Exchange bidding, I mean, I refer</p> <p>3 to it as open bidding.</p> <p>4 Q. Do you know what exchange bidding</p> <p>5 is in the context of Google?</p> <p>6 A. The term I've been using is "open</p> <p>7 bidding."</p> <p>8 Q. Okay.</p> <p>9 A. So -- for in the interest of</p> <p>10 clarity, because Google does have a habit of</p> <p>11 renaming technologies, I will be referring to it</p> <p>12 as "open bidding."</p> <p>13 Q. What was the detection rate of</p> <p>14 malvertising or ad fraud for ads served through</p> <p>15 open bidding in 2016?</p> <p>16 A. As I sit here right now, I'm not</p> <p>17 sure. I guess I would ask you if it's cited in</p> <p>18 my report, I'm happy to talk through it.</p> <p>19 Q. Do you know the detection rate</p> <p>20 for malvertising or ad fraud for ads served</p> <p>21 through open bidding for any year?</p> <p>22 A. I would say pre ads.txt,</p> <p>23 malvertising and domain spoofing, I mean, it was</p> <p>24 high, it was climbing. It was a known --</p> <p>25 malvertising was a known threat.</p> |

| Page 242 | Page 244 |
|---|---|
| <p>1 I mean, I remember when I was in</p> <p>2 the government in 20 -- 2005, 2006, 2007, we</p> <p>3 were seeing more and more -- we were seeing that</p> <p>4 more and more as a vector. As I said earlier,</p> <p>5 there was spam e-mail and phishing e-mail, and</p> <p>6 it was migrating to malvertising, you know, in</p> <p>7 the various forms of malvertising.</p> <p>8 So I don't have specific data</p> <p>9 right in front of me, but I can tell you that as</p> <p>10 a US Government employee, as an FBI agent, we</p> <p>11 were talking about it more and more in the squad</p> <p>12 area, we were seeing more and more threats</p> <p>13 introduced through that vector, and it was just</p> <p>14 becoming commonplace.</p> <p>15 Q. You said pre ads.txt,</p> <p>16 malvertising was high.</p> <p>17 How do you quantify that?</p> <p>18 A. I'm just telling you based on my</p> <p>19 professional experience working in the field, we</p> <p>20 were talking about it more and more.</p> <p>21 I remember vividly just being in</p> <p>22 the squad area of the FBI, working my cyber</p> <p>23 cases, and, you know, starting to talk with my</p> <p>24 colleagues and learn about their cases and, you</p> <p>25 know, them talking about, hey, you know, this is</p> | <p>1 A. That's what I asked you. If</p> <p>2 there's a particular point in the report, I'm</p> <p>3 happy to talk through it. And when you asked</p> <p>4 the question, you jogged my memory. Is there a</p> <p>5 paragraph you want to talk through? Because I</p> <p>6 do remember making that statement.</p> <p>7 Q. But I want to talk about not</p> <p>8 compared to header bidding.</p> <p>9 I'm saying the waterfall dynamic</p> <p>10 compared to open bidding.</p> <p>11 A. Okay. So what's your question</p> <p>12 again?</p> <p>13 Q. Do you make any comparison of the</p> <p>14 rate of malvertising or ad fraud, open bidding</p> <p>15 compared to the waterfall dynamic?</p> <p>16 A. I don't know if you can because</p> <p>17 waterfalling was essentially retired once header</p> <p>18 bidding came into play. Or if it wasn't</p> <p>19 retired, it was just, you know, wasn't widely</p> <p>20 adopted, so I'm not sure if you can make that</p> <p>21 comparison.</p> <p>22 Q. Could you not look at historical</p> <p>23 numbers of malvertising or ad fraud from the</p> <p>24 waterfall dynamic compared to statistics from</p> <p>25 open bidding?</p> |
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| <p>1 something, you know, we're seeing more and more</p> <p>2 of these days. You know, at the time they</p> <p>3 called it malvertising. Of course since then,</p> <p>4 it's been broken out in various aspects of</p> <p>5 malvertising, but essentially pay loads or risk</p> <p>6 introduced through advertising technologies.</p> <p>7 Q. Do you make any comparison of the</p> <p>8 rate of malvertising or ad fraud in open bidding</p> <p>9 compared to the waterfall dynamic?</p> <p>10 A. I believe I did in my report. I</p> <p>11 believe I spoke about some advantages of</p> <p>12 waterfalling. Is there something you want to</p> <p>13 point me to and we can talk through it?</p> <p>14 Q. I'm not sure it's in there.</p> <p>15 What I'm asking for is: do you</p> <p>16 compare open bidding in the waterfall dynamic in</p> <p>17 terms of malvertising or ad fraud?</p> <p>18 A. I'm not even sure I understand</p> <p>19 your question. Waterfalling is pre header</p> <p>20 bidding and certainly pre open bidding. It was</p> <p>21 essentially the first iteration of -- widely</p> <p>22 adopted first iteration of digital advertising.</p> <p>23 Q. And one of the arguments you make</p> <p>24 is that the waterfall dynamic was more secure</p> <p>25 than header bidding, right?</p> | <p>1 A. Again, they didn't exist in the</p> <p>2 same -- right, widely adopted, they didn't</p> <p>3 exist. Waterfalling evolved into header</p> <p>4 bidding, which evolved into open bidding. So</p> <p>5 the two book ends, you know, I'm not sure if</p> <p>6 there's enough data to compare that.</p> <p>7 Q. So a the answer is you didn't</p> <p>8 make any comparison, though, between open</p> <p>9 bidding in the waterfall dynamic in terms of</p> <p>10 malvertising or ad fraud?</p> <p>11 A. The answer is I don't think it's</p> <p>12 possible to make that comparison.</p> <p>13 Q. It's not possible to look at</p> <p>14 historical rates of malvertising and ad fraud in</p> <p>15 the waterfall dynamic, and take those historic</p> <p>16 numbers and compare them to the numbers of</p> <p>17 malvertising or ad fraud for open bidding?</p> <p>18 A. I mean, you're talking about</p> <p>19 maybe years later. I mean, the industry</p> <p>20 completely changed. The tools, techniques and</p> <p>21 protocols of the adversaries completely changed.</p> <p>22 I mean, you are not measuring apples to apples</p> <p>23 here. You're measuring apples in one era</p> <p>24 towards oranges in another. I mean, it's</p> <p>25 completely different.</p> |

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|--|---|
| <p>1 I can tell you what I view as the</p> <p>2 advantages of waterfalling, but you're not</p> <p>3 asking me that question.</p> <p>4 Q. But I'm asking for the</p> <p>5 statistical support for that, of what was the</p> <p>6 rate of malvertising or ad fraud when the</p> <p>7 waterfall dynamic was widely adopted and used?</p> <p>8 A. It was low.</p> <p>9 Q. Like what?</p> <p>10 A. I don't know. But I can tell you</p> <p>11 that because the way the waterfalling process</p> <p>12 was functioned, that the concept of</p> <p>13 know-your-customer and the rating of your</p> <p>14 advertiser actually, you know, organically and</p> <p>15 not by design helped mitigate that particular</p> <p>16 risk of malvertising.</p> <p>17 Q. You say it was "low," low using</p> <p>18 what metric?</p> <p>19 A. I don't know. I don't have data.</p> <p>20 If you could point me to that particular</p> <p>21 paragraph in my report, we both know it's in</p> <p>22 here and in the interest -- I mean, I'm happy to</p> <p>23 look for it, but it's your time. I'm happy to</p> <p>24 talk you through it.</p> <p>25 Q. I'm asking you whether you knew</p> | <p>1 Q. You had stated that the rate of</p> <p>2 malvertising or ad fraud when waterfall dynamics</p> <p>3 was widely adopted was "low," was your word.</p> <p>4 I'm asking you to quantify that</p> <p>5 for me, what does "low" mean?</p> <p>6 A. It was just low compared to</p> <p>7 header bidding.</p> <p>8 Q. How do you know if something is</p> <p>9 low compared to something else if you don't know</p> <p>10 the rate in which it's occurring in the</p> <p>11 waterfall?</p> <p>12 A. I'm making that assessment based</p> <p>13 on the totality of the information that I</p> <p>14 reviewed. And that when the waterfall technique</p> <p>15 was utilized, there was a lower rate of</p> <p>16 malvertising for specific reasons surrounding,</p> <p>17 as I said earlier, the know -- a</p> <p>18 know-your-customer organic program that wasn't</p> <p>19 even -- wasn't even an intention, but it was a</p> <p>20 positive by-product of the waterfall technique.</p> <p>21 Because the way the waterfall technique worked</p> <p>22 is only reputable people, bidders that you had</p> <p>23 done business before in the past that it served</p> <p>24 up legitimate, quality ads would climb to the</p> <p>25 top. And therefore, if they offered the price</p> |
| Page 247 | Page 249 |
| <p>1 or know now the rate of malvertising or ad fraud</p> <p>2 when the -- waterfall dynamic was widely adopted</p> <p>3 and used?</p> <p>4 A. I'm just going to take a second</p> <p>5 to try to find that paragraph.</p> <p>6 Q. Okay.</p> <p>7 A. (Witness reviews document.)</p> <p>8 MS. MAUSER: It's up to you if</p> <p>9 you want him to look for the paragraph.</p> <p>10 It's right in front of him, he knows</p> <p>11 it's there. I can --</p> <p>12 MR. FREEMAN: Sure. You can tell</p> <p>13 him.</p> <p>14 MS. MAUSER: Anthony, I believe</p> <p>15 it's paragraph 72 that you're looking</p> <p>16 for. That's the only reference I</p> <p>17 recall.</p> <p>18 THE WITNESS: So much easier when</p> <p>19 you can do these virtually because you</p> <p>20 can search the documents. Okay, let me</p> <p>21 read paragraph 72.</p> <p>22 (Witness reviews document.)</p> <p>23 Okay, now, I'm sorry, what was</p> <p>24 your question?</p> <p>25 BY MR. FREEMAN:</p> | <p>1 that you were looking for, they would win the</p> <p>2 bid and be able to place the ad.</p> <p>3 That also helped protect user</p> <p>4 data. Rather than send the sensitive user data</p> <p>5 to all bidders, it just went to those who</p> <p>6 actually had an opportunity to bid on the</p> <p>7 auction. And so that technique, again, it was</p> <p>8 an organic by-product of the technique, did</p> <p>9 ensure lower malicious rates, lowest -- lower</p> <p>10 malicious activity rates in the waterfall</p> <p>11 technique.</p> <p>12 Q. Is it fair to say, though, you</p> <p>13 can't quantify what that means?</p> <p>14 A. No, I don't think that's fair to</p> <p>15 say. I can say that in my report, I have not</p> <p>16 cited any of that specific data, but I'm quite</p> <p>17 certain that that can be done; waterfalling</p> <p>18 compared to header bidding.</p> <p>19 Q. Isn't that one of your points</p> <p>20 that you're trying to make that waterfall</p> <p>21 technique was more secure than header bidding?</p> <p>22 A. In my professional opinion, I do</p> <p>23 believe that.</p> <p>24 Q. So why wouldn't you cite the</p> <p>25 statistical data to support that?</p> |

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|---|--|
| <p>1 A. Because it's a retired</p> <p>2 technology. Paper and pen and letters are more</p> <p>3 secure than e-mail, but it doesn't mean people</p> <p>4 still use it.</p> <p>5 Q. Are you saying that you've seen a</p> <p>6 statistical analysis of the rate of malvertising</p> <p>7 when the waterfall was widely adopted?</p> <p>8 A. No, I'm not saying that at all.</p> <p>9 I'm saying that in my reverse engineering and</p> <p>10 understanding of waterfalling and the material</p> <p>11 that I've read, again, as an organic by-product</p> <p>12 of the technique, it actually was more secure</p> <p>13 for the reasons I outlined than header bidding.</p> <p>14 But unfortunately, the industry</p> <p>15 evolved. And don't get me wrong, there are</p> <p>16 benefits, different benefits in header bidding</p> <p>17 than waterfalling. But with the introduction of</p> <p>18 those other benefits, it also introduced new and</p> <p>19 other risks. That's the industry we live in;</p> <p>20 that's the world we live in and how things</p> <p>21 operate. And I think that's just a reality.</p> <p>22 Q. But if you don't have a</p> <p>23 statistical metric to measure the rate of</p> <p>24 malvertising in the waterfall, and you don't</p> <p>25 have a statistical metric of the rate of</p> | <p>1 various security enhancements is being used.</p> <p>2 But, again, it is being implemented, different</p> <p>3 people are implementing it in different ways.</p> <p>4 Q. And open bidding is still being</p> <p>5 used, right?</p> <p>6 A. Correct.</p> <p>7 Q. So what is the current rate of</p> <p>8 malvertising or ad fraud in opening bidding?</p> <p>9 A. I mean, as I sit right here in</p> <p>10 this chair and I'm asked the question, I can't</p> <p>11 answer it. And I'm wondering if it was in my</p> <p>12 report.</p> <p>13 Q. What is the current rate of</p> <p>14 malvertising or ad fraud in header bidding?</p> <p>15 MS. MAUSER: Object to form.</p> <p>16 THE WITNESS: I'm not sure if I</p> <p>17 could answer that. I know in my report</p> <p>18 I talk about ad fraud and malvertising</p> <p>19 on the rise to the point of reaching a</p> <p>20 hundred billion dollars by 2024. I</p> <p>21 mean, ad fraud and malvertising is only</p> <p>22 going to increase. I mean, it's the</p> <p>23 world we live in. With the adoption of</p> <p>24 more bandwidth, more internet-connected</p> <p>25 devices, more users. And, of course, as</p> |
| Page 251 | Page 253 |
| <p>1 malvertising with the using of header bidding,</p> <p>2 how can you say one is higher than another?</p> <p>3 A. Again, as I sit here as the</p> <p>4 expert in this case just unpacking the two</p> <p>5 techniques and understanding how they work, it's</p> <p>6 just -- how could you not think that? I mean,</p> <p>7 you're talking about a bid going to three</p> <p>8 people, three of your trusted partners, for</p> <p>9 example, versus a bid going to 300 people that</p> <p>10 you don't even know. Of course there's going to</p> <p>11 be more risk.</p> <p>12 Do I have a statistical analysis</p> <p>13 of that? I do not. And I'm going to say I do</p> <p>14 not because you're talking about a technology</p> <p>15 that's been retired for years and replaced with</p> <p>16 header bidding. And so I'm not sure where that</p> <p>17 data would lie. And even if that data did</p> <p>18 exist, I'm not even sure if I would -- if I</p> <p>19 would believe it was valid to the point where I</p> <p>20 would want to sit before you and represent it.</p> <p>21 Q. Well, header bidding, as we've</p> <p>22 already established, is still currently being</p> <p>23 used, right?</p> <p>24 A. That is correct. The evolution</p> <p>25 of header bidding to where it is today with the</p> | <p>1 I've said before is adversaries sit home</p> <p>2 and cook up new ways in which to defeat</p> <p>3 defenses, we're going to continue to see</p> <p>4 a rise in this -- in this sort of</p> <p>5 activity.</p> <p>6 MR. FREEMAN: I don't know how</p> <p>7 long we've been going, yeah, it's been</p> <p>8 about an hour. We can take a break.</p> <p>9 MS. MAUSER: Sure.</p> <p>10 THE VIDEOGRAPHER: Off the record</p> <p>11 at 4:54. This ends media unit number</p> <p>12 five.</p> <p>13 (Brief recess)</p> <p>14 THE VIDEOGRAPHER: On the record</p> <p>15 at 5:05. This begins media unit six in</p> <p>16 the deposition of Anthony Ferrante.</p> <p>17 BY MR. FREEMAN:</p> <p>18 Q. I want to move to the topic of</p> <p>19 3ve that you discuss in your report.</p> <p>20 So when was 3ve first identified</p> <p>21 as a potential problem?</p> <p>22 A. Give me one second here.</p> <p>23 (Witness reviews document.)</p> <p>24 Trying to find it in my report so</p> <p>25 I can get the exact date. Here we go.</p> |

Page 254

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

11 Q. So is it fair to say that at some

12 point in 2016 3ve was identified as a problem?

13 A. You know, knowing how things work

14 on the government side, it's hard to say exactly

15 when but certainly within that period.

16 Q. Did you personally participate in

17 the investigation of 3ve?

18 A. No, I did not.

19 Q. Did you personally participate in

20 the prosecution of 3ve?

21 A. No, I did not.

22 Q. Were you ever called as a witness

23 for any court proceeding relating to the

24 prosecution?

25 A. Of 3ve?

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1 Q. Yeah.

2 A. No, I was not.

3 Q. Just so we're clear, we're

4 talking about 3ve. It was more than just one

5 individual ultimately charged; is that right?

6 A. I don't recall the exact details.

7 Q. Okay. At the time 3ve was

8 investigated, you had already left the FBI; is

9 that right?

10 A. Again, I don't know. I didn't

11 leave the U.S. government until April of 2017 so

12 --

13 Q. Okay.

14 A. I was still a government

15 employee, I'm sure, when it was being

16 investigated. But as we talked earlier, I was

17 detailed or assigned over to the White House, so

18 I wouldn't have been privy to information like

19 this.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

8 Q. Okay. What percent of those

9 fraudulent bid requests generated by 3ve went

10 through AdX?

11 A. Open bidding?

12 Q. Sure, we can do open bidding.

13 A. You know, I'm not sure, but I can

14 tell you that it was Google and White Ops that

15 actually uncovered open bidding, so I don't have

16 the exact statistical data.

17 MS. MAUSER: Repeat your last

18 answer. I think you may have misspoke

19 but just --

20 THE WITNESS: Okay.

21 MS. WOOD: Do you want to have

22 the court reporter read it back?

23 (The court reporter read back the

24 record as requested.)

25 THE WITNESS: It was Google and

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1 White Ops that uncovered 3ve.

2 BY MR. FREEMAN:

3 Q. But part of Google identifying

4 and helping with the prosecution of 3ve is

5 because that fraudulent activity was occurring

6 on their platforms?

7 A. That is correct. That is a safe

8 assessment to make. I don't know the

9 statistical data, but it is safe to say.

10 Q. Do you know, while not the

11 precise number, was it more than 50% of the

12 fraudulent bid requests were on Google platforms

13 in regards to 3ve?

14 A. Again, I don't know the number,

15 but I do know that it was Google who was

16 instrumental in identifying it. I also know

17 that it was Google who was instrumental in

18 developing technologies to prevent it from

19 happening again.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

24 Q. Did you review any of the

25 underlying data for this graph?

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|---|---|
| <p>1 A. I did not review the underlying</p> <p>2 data associated with this graph. Statistical</p> <p>3 data, that is.</p> <p>4 Q. Where did the -- where did this</p> <p>5 graph come from?</p> <p>6 A. I'm not exactly sure.</p> <p>7 Q. Is this a graph showing bid</p> <p>8 requests right before and after the takedown of</p> <p>9 3ve only on Google platforms?</p> <p>10 A. Again, I'm not -- I'm not sure.</p> <p>11 As I sit here right now, I just can't recall.</p> <p>12 Q. Do you have any evidence or</p> <p>13 information to suggest that Google's products</p> <p>14 were less vulnerable to 3ve's attacks than</p> <p>15 others?</p> <p>16 A. Can you repeat the question?</p> <p>17 Q. Sure.</p> <p>18 Do you have any evidence or</p> <p>19 information to suggest that Google's products</p> <p>20 were less vulnerable to 3ve's attacks than</p> <p>21 others?</p> <p>22 A. When you say "Google's products,"</p> <p>23 are you referring to a specific product?</p> <p>24 Q. I'm referring to DFP, double</p> <p>25 click for publisher, and AdX, which depending on</p> | <p>1 susceptible to the 3ve attack. And when I say</p> <p>2 "both," I mean open bidding and header bidding.</p> <p>3 It utilized domain spoofing at such a large</p> <p>4 scale programmatically, and that's exactly what</p> <p>5 ads.txt as a result of the 3ve, that's exactly</p> <p>6 what ads.txt was created to mitigate against.</p> <p>7 Q. So you talked about a security</p> <p>8 gap that 3ve exploited, I don't know if you used</p> <p>9 that word --</p> <p>10 A. Highlighted, exploited, sure.</p> <p>11 Q. But that security gap existed</p> <p>12 both outside of Google's platforms and products</p> <p>13 and also within Google's platforms and products,</p> <p>14 right?</p> <p>15 A. You keep saying "products," but I</p> <p>16 want to be really -- just because Google has so</p> <p>17 many products, I want to be specific and say</p> <p>18 their advertising products, fair?</p> <p>19 Q. Fair.</p> <p>20 A. Okay, yes.</p> <p>21 Q. We can be more specific.</p> <p>22 That the security gap that</p> <p>23 existed that 3ve exploited also was a security</p> <p>24 gap within GAM, right?</p> <p>25 A. The spoofing of the domains?</p> |
| Page 259 | Page 261 |
| <p>1 the timeframe we're talking about GAM?</p> <p>2 A. So the advertising</p> <p>3 technologies -- you're asking if Google's</p> <p>4 advertising technologies were less secure</p> <p>5 against 3ve; is that your question? I'm sorry.</p> <p>6 Q. Mine was slightly different.</p> <p>7 Mine was: do you have any</p> <p>8 evidence or information to suggest that Google's</p> <p>9 products were less vulnerable to 3ve's attacks</p> <p>10 than others, which I think is the opposite of</p> <p>11 what you're saying.</p> <p>12 Were they more -- do you have any</p> <p>13 evidence to suggest that they were more secure</p> <p>14 than others?</p> <p>15 A. I will say that I think the</p> <p>16 entire advertising industry was susceptible to</p> <p>17 the 3ve attack, and that's why I think it</p> <p>18 happened at the scale that it did. The 3ve</p> <p>19 attack highlighted a security gap essentially,</p> <p>20 as I said earlier, in the similar concept to the</p> <p>21 SPF, the sender policy framework, that validates</p> <p>22 partners that you want to conduct business with</p> <p>23 in the advertising work space, in the</p> <p>24 advertising space. So I didn't look at one</p> <p>25 versus the other because I viewed them both</p> | <p>1 Q. Correct.</p> <p>2 A. I want to be really clear because</p> <p>3 3ve is a multi-faceted operation that involved</p> <p>4 malware and recruitment of bots for a bot net,</p> <p>5 but the actual -- okay, I want to be really,</p> <p>6 really clear here, the actual creation and</p> <p>7 interaction with spoofed domains was what was a</p> <p>8 security gap in the advertising industry. And</p> <p>9 that aspect of 3ve was leveraged both in header</p> <p>10 bidding and open bidding, that aspect of it.</p> <p>11 There is so much more to 3ve, you know, the</p> <p>12 exploitation of data centers, the exploitation</p> <p>13 of BGP, which is, I mean, the internet, right.</p> <p>14 And so in reading that, I mean, right away I</p> <p>15 said these are significant Russian hackers who</p> <p>16 conducted this operation. So there was a huge</p> <p>17 operation exploiting various aspects of the</p> <p>18 internet.</p> <p>19 But specific to your question,</p> <p>20 the gap that was identified was the in -- the</p> <p>21 nonverification of domains that publishers were</p> <p>22 communicating with, and that's what was</p> <p>23 leveraged by 3ve in both header bidding and open</p> <p>24 bidding.</p> <p>25 Does that make sense?</p> |

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|---|--|
| <p>1 Q. So once Google and White Ops</p> <p>2 identified this potential problem, before the</p> <p>3 takedown is what I'm saying, did they seek the</p> <p>4 assistance from any other entities?</p> <p>5 A. Yes, it's my understanding that</p> <p>6 they reached out to government, Department of</p> <p>7 Justice, the Federal Bureau of Investigation,</p> <p>8 Homeland Security. I understand they talked to</p> <p>9 other security researchers in the industry.</p> <p>10 I mean, the way I read it and in</p> <p>11 my experience and having been involved with a</p> <p>12 few of these in my time in government is they</p> <p>13 created a task force to fight this problem.</p> <p>14 It's a very common approach to a big problem</p> <p>15 like this.</p> <p>16 Q. What did you do to understand the</p> <p>17 3ve attack?</p> <p>18 A. Understand the 3ve attack?</p> <p>19 Q. Yeah.</p> <p>20 A. I read the open source material</p> <p>21 on it.</p> <p>22 Q. Did you read anything that was</p> <p>23 not publicly sourced about the 3ve attack?</p> <p>24 A. No. I mean, if you're</p> <p>25 specifically asking me if I read any government</p> | <p>1 those particular cases at this level, it's not</p> <p>2 unusual to create this task force approach to</p> <p>3 combat these threats. It's very, very common.</p> <p>4 Q. Did Google have any financial</p> <p>5 incentives to reach out to the FBI to help fight</p> <p>6 the 3ve attacks?</p> <p>7 A. So I can actually answer this</p> <p>8 specific to my experience in private practice</p> <p>9 now for the last seven years. There's actually</p> <p>10 no financial benefit in cooperating with the</p> <p>11 government. As a matter of fact, it's extremely</p> <p>12 expensive. And in the cases that I'm working</p> <p>13 today, cooperating with the government, it's a</p> <p>14 lot of money for these organizations, but they</p> <p>15 do it for the right reasons. And, you know, I'm</p> <p>16 grateful for that.</p> <p>17 Q. How much money did Google lose as</p> <p>18 a result of 3ve?</p> <p>19 A. I'm not sure.</p> <p>20 Q. So are you really saying that</p> <p>21 Google didn't have any financial incentive to</p> <p>22 reach out to the FBI to help them stop the 3ve</p> <p>23 attacks that were costing them money on their</p> <p>24 platforms?</p> <p>25 MS. MAUSER: Object to form. Go</p> |
| Page 263 | Page 265 |
| <p>1 material on it, the answer is no. But I also</p> <p>2 only read what was publicly available on the</p> <p>3 internet.</p> <p>4 Q. What is your understanding of why</p> <p>5 Google and White Ops sought the assistance from</p> <p>6 outside entities?</p> <p>7 A. It's very common. It's very</p> <p>8 common for entities like Google, like White Ops,</p> <p>9 like Microsoft. I mean, name the player. I</p> <p>10 mean, even smaller players identify risk or</p> <p>11 identify fraud on the internet and seek the</p> <p>12 assistance from government. It is -- I mean, I</p> <p>13 think it's the model we all want to strive for.</p> <p>14 You know, this partnership mentality where we're</p> <p>15 all in it together.</p> <p>16 And as you can appreciate, Google</p> <p>17 has certain insights that I know from my</p> <p>18 experience the government would love. But, of</p> <p>19 course, there's -- there's checks and balances</p> <p>20 in place. However, when Google identifies fraud</p> <p>21 or malicious activity in the interest of</p> <p>22 protecting the overall infrastructure that we</p> <p>23 all utilize every day as American citizens, they</p> <p>24 do have the ability to raise their hand and</p> <p>25 reach out to government for assistance. And in</p> | <p>1 ahead.</p> <p>2 THE WITNESS: I'm not saying --</p> <p>3 sorry. I'm not saying -- I mean, I</p> <p>4 can't answer if they had any financial</p> <p>5 incentives.</p> <p>6 What I'm stating is in my</p> <p>7 professional experience as a security</p> <p>8 expert working exactly these matters</p> <p>9 every day -- right now I'm working half</p> <p>10 a dozen cases with the U.S. government</p> <p>11 standing shoulder to shoulder with me,</p> <p>12 and I can tell you from personal, real</p> <p>13 experiences that I watch these companies</p> <p>14 hemorrhage cash as they work as partners</p> <p>15 with the U.S. government.</p> <p>16 So I don't know if they had any,</p> <p>17 to use your term, financial gain, but I</p> <p>18 can tell you that it's also a financial</p> <p>19 burden to them as they cooperate with</p> <p>20 the U.S. government.</p> <p>21 And the cases I'm working are not</p> <p>22 nearly the size of the 3ve takedown, so</p> <p>23 I can only imagine the expenses that</p> <p>24 they incurred.</p> <p>25 BY MR. FREEMAN:</p> |

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20 BY MR. FREEMAN:
 21 Q. Do you know how much money Criteo
 22 is spending on developing standard tools to
 23 bolster the security of the advertising
 24 ecosystem?
 25 A. I do not.

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1 Q. Would you consider what Criteo
 2 spends to be a substantial amount of money?
 3 A. I don't know what they spend.
 4 Q. What about The Trade Desk, are
 5 they spending substantial amounts of money to
 6 develop standard tools in order to bolster the
 7 security of the advertising ecosystem?
 8 A. As I sit here right now, I can't
 9 answer that question.
 10 Q. What about OpenX?
 11 A. As I sit here right now, I can't
 12 answer that question.
 13 Q. What about Magnite?
 14 A. As I sit here right here, I can't
 15 answer that question.
 16 Q. So it's possible that those
 17 companies are also spending substantial amounts
 18 of money in developing standard tools in order
 19 to bolster the security of the advertising
 20 ecosystem?
 21 MS. MAUSER: Object to form.
 22 THE WITNESS: Again, as I sit
 23 here right now, I can't answer that
 24 question. I would just also say that
 25 you're very focused on money. It's not

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1 only about money. It's about time, it's
 2 about knowledge, it's about sharing of
 3 information.
 4 BY MR. FREEMAN:
 5 Q. Are you saying it's not possible
 6 that Criteo or Trade Desk or OpenX is spending
 7 substantial amounts of time developing standard
 8 tools -- standards and tools in order to bolster
 9 the security of the advertising ecosystem?
 10 MS. MAUSER: Object to form.
 11 THE WITNESS: I'm not saying that
 12 at all. I'm just responding to your
 13 question, which was specific about money
 14 only. And I'm saying that it's not only
 15 about money. It's about time, money and
 16 knowledge, as I've written in my report
 17 here.
 18 BY MR. FREEMAN:
 25 Q. Is 100 hours a substantial amount

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1 of time?
 2 A. I wouldn't look at it as hours.
 3 I would look at it as teams, right, dedicated
 4 programs.
 5 Q. Time meaning teams; is that what
 6 you're saying?
 7 A. Time meaning human resources
 8 times. I wouldn't look at it as 100 hours
 9 versus 200 hours. I would look at it as teams.
 10 In my professional experience, in
 11 my strategic consulting to my clients, it's not
 12 about time. It's about do you have teams of
 13 people working on these problems?
 14 Q. Okay. How many teams does Google
 15 have dedicated to the development of standards,
 16 tools in order to bolster the security of the
 17 advertising ecosystem?
 18 A. As I sit here right now, I can't
 19 answer that question.
 20 Q. Why not?
 21 A. I mean, it's a very complicated
 22 question, and Google is an organization -- a
 23 sophisticated organization, so it would take
 24 sitting down and walking through each team.
 25 But I can tell you from what I

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1 saw and what I learned about their commitment in
2 the space, I would quantify it as substantial.
3 I mean, they developed ads.txt. They outed 3ve.
4 I mean, those are two massive operation. That's
5 the entire industry -- I think the number I
6 quoted was \$29 million was hemorrhaging. I
7 mean, those are two really great examples.

8 Q. They didn't do those by
9 themselves, right?

10 A. They found it. They partnered.
11 Google and White Ops partnered together and
12 raised their hand.

13 Q. That's for 3ve. There was a
14 whole working group outside of Google that also
15 helped in the development of ads.txt, right?

16 A. But Google led the charge on it.

17 Q. But the answer to my question is
18 yes, there are many other groups that led to the
19 development of ads.txt, right?

20 A. But that's exactly what I'm
21 talking about; you are making my point exactly.
22 Google is at the forefront. They are the
23 leaders in this space and they are saying, hey,
24 everybody, come with us, let's knowledge share,
25 let's share information, let's work together. I

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1 mean, it is the exact concept the U.S.
2 government wants, right, and it is the exact
3 concept that I think the industry wants.

4 The industry is not going to
5 adopt technologies that one person in a vacuum
6 develops. They want to coalesce around an idea
7 and crowdserve it and make it the very best it
8 can through knowledge sharing, and that's
9 exactly what Google is doing. And they did it
10 so well that ads.txt was widely adopted almost
11 immediately and endorsed by the IAB.

12 Q. Does Amazon have -- how many
13 teams does Amazon have dedicated to the
14 development of standard tools in order to
15 bolster the security of the advertising
16 ecosystem?

17 A. As I sit here right now, I can't
18 answer that question.

19 Q. What about Criteo?

20 A. As I --

21 MS. MAUSER: Objection,
22 foundation.

23 BY MR. FREEMAN:

24 Q. You can answer.

25 A. As I sit here right now, I can't

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1 answer that question.

2 Q. Does The Trade Desk invest a
3 substantial amount of time in the development of
4 standard tools to bolster the security of the
5 advertising ecosystem?

6 A. I don't have that information.
7 And as I sit here right now, I can't answer that
8 question.

9 Q. Did you have access to Google's
10 information about that?

11 A. I looked at the totality of the
12 information provided to me and what was
13 available in open source.

14 Q. But you were retained by Google
15 as an expert. Why didn't you ask Google for
16 that information that was not publicly
17 available?

18 A. Based on what I had, I was able
19 to form an opinion. Again, you're talking to
20 someone who works in this industry every single
21 day and is advice advising clients in big tech
22 on this topic and actually coming to the aid of
23 these clients when they have a crisis to combat
24 these sorts of risks.

25 So when I was retained and

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1 started reading the information provided to me,
2 I could quantify it as an expert in this
3 industry. They're making a substantial
4 investment. That's why I used the term
5 "substantial."

6 Q. Again, just to be clear you, used
7 the phrase "substantial" without defining any
8 particular metric or measurement, right?

9 A. The measurement is my
10 professional experience and my day-to-day work
11 that I'm doing every single day compared to
12 other big tech.

[REDACTED]

24 Q. Did you look to see if any other
25 participants within the digital advertising

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| <p style="text-align: right;">Page 282</p> <p>1 ecosystem had certificates from TAG like Google?</p> <p>2 A. I'm sure I did.</p> <p>3 Q. Are you aware that The Trade Desk</p> <p>4 has achieved certified against fraud by TAG?</p> <p>5 A. Am I aware of that?</p> <p>6 Q. Yeah, are you aware of that?</p> <p>7 A. As I sit here right now, I don't</p> <p>8 recall but, okay.</p> <p>9 Q. Are you aware that The Trade Desk</p> <p>10 is certified against malware by TAG?</p> <p>11 A. As I sit here right now, I don't</p> <p>12 recall.</p> <p>13 Q. Are you aware that Criteo also</p> <p>14 has achieved the brand safety certification by</p> <p>15 TAG?</p> <p>16 A. I think that's great. And, no, I</p> <p>17 wasn't aware of that.</p> <p>18 Q. Are you aware that Criteo has</p> <p>19 been certified against fraud by TAG?</p> <p>20 A. No, as I sit here right now, I</p> <p>21 was not aware of that.</p> <p>22 Q. Are you aware that OpenX has the</p> <p>23 brand safety certified by TAG?</p> <p>24 A. No, as I sit here right now, I</p> <p>25 wasn't aware of that. But I think these</p> | <p style="text-align: right;">Page 284</p> <p>1 recall.</p> <p>2 Q. Are you aware PubMatic has the</p> <p>3 brand safety certification by TAG?</p> <p>4 A. No. As I sit here right now, I</p> <p>5 can't recall.</p> <p>6 Q. Are you aware of Index Exchange</p> <p>7 having the brand safety certification by TAG?</p> <p>8 A. As I sit here right now, I can't</p> <p>9 recall.</p> <p>10 Q. If that information were to be</p> <p>11 true about these certifications of these</p> <p>12 companies, does that change your opinion about</p> <p>13 the value of Google's certification compared to</p> <p>14 others in the market?</p> <p>15 MS. MAUSER: Object to form.</p> <p>16 THE WITNESS: Can you reask the</p> <p>17 question? Can you repeat the question?</p> <p>18 I'm sorry.</p> <p>19 BY MR. FREEMAN:</p> <p>20 Q. If that information were to be</p> <p>21 true about these certifications of these</p> <p>22 companies, does that change your opinion about</p> <p>23 the value of Google's certifications compared to</p> <p>24 others in the market?</p> <p>25 MS. MAUSER: Object to form.</p> |
| <p style="text-align: right;">Page 283</p> <p>1 certifications are great, and it just speaks to</p> <p>2 the evolution of the industry as everybody is</p> <p>3 working together to implement enhanced</p> <p>4 technologies for the safety and security of the</p> <p>5 consumers. I really do.</p> <p>6 Q. Are you aware that OpenX is</p> <p>7 certified for transparency by TAG?</p> <p>8 A. No, as I sit here right now, I</p> <p>9 was not aware of that.</p> <p>10 Q. Does Google have that</p> <p>11 certification for transparency by TAG?</p> <p>12 A. As I sit here right now, I can't</p> <p>13 recall.</p> <p>14 Q. Are you aware that Amazon</p> <p>15 advertising has achieved the brand safety</p> <p>16 certification by TAG?</p> <p>17 A. As I sit here right now, I can't</p> <p>18 recall.</p> <p>19 Q. Are you aware that Xandr has the</p> <p>20 brand safety certification by TAG?</p> <p>21 A. No, as I sit here right now, I</p> <p>22 can't recall.</p> <p>23 Q. Are you aware that Magnite has</p> <p>24 the brand safety certification by TAG?</p> <p>25 A. As I sit here right now, I can't</p> | <p style="text-align: right;">Page 285</p> <p>1 THE WITNESS: As I said earlier,</p> <p>2 I think it's great that these companies</p> <p>3 are receiving these certifications. I</p> <p>4 think it speaks to the evolution of the</p> <p>5 industry and how working together to</p> <p>6 identify risk and mitigate that risk is</p> <p>7 providing benefits to the consumers.</p> <p>8 And these organizations are being</p> <p>9 recognized for their work in this space.</p> <p>10 BY MR. FREEMAN:</p> <p>11 Q. You said various iterations of</p> <p>12 this throughout today, but that Google was a</p> <p>13 leader in the cyber security within the</p> <p>14 advertising -- digital advertising ecosystem; is</p> <p>15 that right?</p> <p>16 A. I do believe that Google was an</p> <p>17 innovator and leader in the space.</p> <p>18 Q. Okay. What statistical data did</p> <p>19 you review that supports the idea that Google</p> <p>20 was a leader within this space?</p> <p>21 MS. MAUSER: Object to form.</p> <p>22 THE WITNESS: I wouldn't say that</p> <p>23 the evidence would be in the form of</p> <p>24 statistical data, rather innovative</p> <p>25 data, rather in the innovation of frame</p> |

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| <p>1 works. And, you know, the clear example</p> <p>2 there is the innovation of open bidding</p> <p>3 and the various features in open</p> <p>4 bidding. You don't need me to tell you</p> <p>5 that they're a leader in the space and</p> <p>6 that they're an innovator. Look at all</p> <p>7 the other companies that have followed</p> <p>8 their lead and adopted the same</p> <p>9 features.</p> <p>10 Google, again, made that</p> <p>11 investment in time, money and knowledge</p> <p>12 and -- and as I walked through those six</p> <p>13 risks that they were able to mitigate,</p> <p>14 shortly after them rolling out their</p> <p>15 technologies or their framework</p> <p>16 enhancements header bidding, rolled out</p> <p>17 many of the same features.</p> <p>18 In the current implementation of</p> <p>19 header bidding, server side header</p> <p>20 bidding, it's very similar to Google's</p> <p>21 open bidding. And as we all know, many</p> <p>22 providers today have adopted header</p> <p>23 bidding and tweaked it to their own</p> <p>24 liking. Amazon TAM is a great example.</p> <p>25 Prebid, which is open source.</p> | <p>1 peer-reviewed journal to tell me that.</p> <p>2 As I just walked through having worked</p> <p>3 in this industry my entire life and</p> <p>4 having, you know, work in it today,</p> <p>5 Google, again, made time, money and</p> <p>6 knowledge investment into a more secure</p> <p>7 platform for advertising. And the -- as</p> <p>8 I said earlier, the greatest compliment</p> <p>9 or indicator that they're viewed as a</p> <p>10 leader is everyone else in the industry</p> <p>11 adopted their innovation, their</p> <p>12 approach, and it is now widely used in</p> <p>13 server side header bidding.</p> <p>14 BY MR. FREEMAN:</p> <p>15 Q. I understand you said you didn't</p> <p>16 need one, but what peer-reviewed academic</p> <p>17 research did you review that supports that idea?</p> <p>18 A. I made that opinion based on my</p> <p>19 professional experiences of working in the</p> <p>20 security industry my entire life. I didn't need</p> <p>21 a peer review. I made that opinion based on my</p> <p>22 experiences.</p> <p>23 Q. So the answer to my question is:</p> <p>24 you did not review or rely on any peer-reviewed</p> <p>25 academic research to support the idea that</p> |
| Page 287 | Page 289 |
| <p>1 So when you say why do I consider</p> <p>2 them a leader? Well, one, because they</p> <p>3 developed these new features and these</p> <p>4 new protocols in which the industry</p> <p>5 would operate. But then that's further</p> <p>6 endorsed by the industry complimenting</p> <p>7 them by actually adopting the same</p> <p>8 features and baking them into their</p> <p>9 framework.</p> <p>10 BY MR. FREEMAN:</p> <p>11 Q. Do you know the relative adoption</p> <p>12 in the industry of header bidding compared to</p> <p>13 open bidding?</p> <p>14 A. The relative adoption, I don't.</p> <p>15 I don't. I know that in the header bidding</p> <p>16 space I know that when it is implemented, it's</p> <p>17 very common for those organizations to implement</p> <p>18 with their own proprietary or customized</p> <p>19 implementation.</p> <p>20 Q. What peer-reviewed academic</p> <p>21 journals did you review that supports the idea</p> <p>22 that Google is a leader in cyber security in the</p> <p>23 advertising ecosystem?</p> <p>24 MS. MAUSER: Object to form.</p> <p>25 THE WITNESS: I don't need a</p> | <p>1 Google was a leader within cyber security of the</p> <p>2 advertising ecosystem, right?</p> <p>3 A. The answer is no, I didn't need</p> <p>4 one because I am making that -- I am forming</p> <p>5 that opinion and writing that opinion based on</p> <p>6 my experience as a security professional for my</p> <p>7 entire life.</p> <p>8 Q. What surveys did you conduct or</p> <p>9 review that supports the idea that Google is a</p> <p>10 leader within cyber security in the advertising</p> <p>11 ecosystem?</p> <p>12 A. Again, as I just walked through</p> <p>13 with you I didn't need to conduct a survey. I</p> <p>14 see how the industry is adopting the very same</p> <p>15 features Google developed that they are</p> <p>16 implementing in header bidding.</p> <p>17 Q. So, again, is the answer is you</p> <p>18 didn't rely on any survey or review any survey</p> <p>19 that supports the idea that Google is a leader</p> <p>20 in cyber security in the advertising ecosystem?</p> <p>21 A. I mean, you keep asking me about</p> <p>22 surveys, but I don't understand what I would</p> <p>23 survey. The data is there, it's in front of us</p> <p>24 all right now. I mean Google innovated -- led</p> <p>25 and innovated this more secure approach to</p> |

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|--|---|
| <p>1 online advertising. They do it, they document</p> <p>2 it, others read their documentation and take</p> <p>3 what Google did and implement their same safe</p> <p>4 and secure version of the features.</p> <p>5 So while I did not interview or</p> <p>6 survey, explicitly survey, implicitly, the</p> <p>7 evidence is there if they -- the evidence is</p> <p>8 there.</p> <p>9 Q. What led the industry to create</p> <p>10 header bidding in the first place?</p> <p>11 A. Waterfall, the waterfall approach</p> <p>12 was viewed to limit the amount of revenue that</p> <p>13 could be generated. And so there was a belief</p> <p>14 that rather than stepping down a</p> <p>15 performance-based or reputation-based ladder</p> <p>16 that publishers could make more money if they</p> <p>17 actually conducted bids. I would also say that</p> <p>18 the technology evolved a bit and allowed</p> <p>19 publishers to reveal more information about</p> <p>20 their users to allow more targeted</p> <p>21 advertisements.</p> <p>22 Q. What interviews of Google</p> <p>23 employees or former employees did you conduct or</p> <p>24 review that supports the idea that Google is a</p> <p>25 leader in cyber security in the advertising</p> | <p>1 Q. Okay. You've made the argument</p> <p>2 that Google -- or you stated now Google was a</p> <p>3 leader in cyber security in the advertising</p> <p>4 ecosystem, right?</p> <p>5 A. Correct.</p> <p>6 Q. What other groups or companies</p> <p>7 were they leading in cyber security in the</p> <p>8 advertising ecosystem?</p> <p>9 A. What other groups was Google</p> <p>10 leading?</p> <p>11 Q. You're saying they're a leader.</p> <p>12 Who are they leading?</p> <p>13 A. They're leading the industry.</p> <p>14 Q. Who is in the industry? That's</p> <p>15 my question.</p> <p>16 A. I mean, you've rattled off a</p> <p>17 bunch of names today. I would say for the</p> <p>18 purposes of our discussion, those folks. I</p> <p>19 mean, we're talking about a framework here, not</p> <p>20 an actual company. I mean, that is what I mean.</p> <p>21 I mean, that is leadership. That is not the</p> <p>22 development of a business concept. It's the</p> <p>23 development of a framework, right. That's like</p> <p>24 saying the inventor of TCP/IP, you know, built it</p> <p>25 for, you know, selfish benefits. He built it</p> |
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| <p>1 ecosystem?</p> <p>2 MS. MAUSER: Objection, asked and</p> <p>3 answered.</p> <p>4 THE WITNESS: Yeah, all due</p> <p>5 respect, I think I've answered that.</p> <p>6 BY MR. FREEMAN:</p> <p>7 Q. The answer is you are not relying</p> <p>8 on any interview of a Google employee or former</p> <p>9 employee?</p> <p>10 A. I am relying on my experience as</p> <p>11 a security professional.</p> <p>12 Q. What metric or metrics are you</p> <p>13 opining that Google is better at than the rest</p> <p>14 of their competitors in cyber security in the</p> <p>15 advertising ecosystem?</p> <p>16 MS. MAUSER: Object to form, no</p> <p>17 foundation.</p> <p>18 THE WITNESS: I think that's a</p> <p>19 bit of a complicated question, so I</p> <p>20 would ask that we can step through it.</p> <p>21 When you say they're competitors, you</p> <p>22 mean they're advertising competitors,</p> <p>23 we're not talking about big tech or are</p> <p>24 we?</p> <p>25 BY MR. FREEMAN:</p> | <p>1 for the furtherance of internet communications.</p> <p>2 And what I'm saying is what Google did was</p> <p>3 develop a framework.</p> <p>4 Open bidding is a framework that</p> <p>5 they use today, and a framework that others -- a</p> <p>6 framework, like TCP/IP, a framework that others</p> <p>7 saw, realized the features because of Google's</p> <p>8 documentation and said we would like to develop</p> <p>9 our version of that framework which led to the</p> <p>10 evolution and the more secure version of header</p> <p>11 bidding which is server side. And what's more</p> <p>12 is that while Google has their framework and</p> <p>13 they've tweaked to the likes of the Google</p> <p>14 organization, header -- those who deploy header</p> <p>15 bidding have done the same thing.</p> <p>16 Amazon has got their own</p> <p>17 proprietary version of header bidding. Open</p> <p>18 bidding is their own -- I'm sorry -- Prebid has</p> <p>19 their own free available version and people</p> <p>20 download that base and tweak it to their liking</p> <p>21 so I mean that's what I'm talking about with</p> <p>22 leadership. They developed a framework that is</p> <p>23 now used throughout the industry.</p> <p>24 Q. Is it your testimony that they</p> <p>25 have developed more products than others in the</p> |

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1 industry in cyber security in the advertising
2 ecosystem?

3 A. My testimony is they've developed
4 a framework, not a product. That's what I'm
5 talking about TCPIP, internet communications is
6 a framework that is now the backbone of the
7 internet, okay, it moves data. What Google did
8 is they took -- they took freely available
9 concepts, right, internet concepts,
10 communication concepts and securitized them and
11 said hey, here is a more safe and secure
12 framework in which the advertising industry can
13 operate on and that framework, they use. They
14 said this is ours, we're going to call it open
15 bidding by the by here are all the features
16 based on our lessons learned, our time, our
17 money and our knowledge investment has taught us
18 this over the years and we're going to document
19 all this and others in the industry, as the
20 industry works, see this and they say amazing,
21 we want to take this and bake these same
22 features into header bidding because we like
23 header bidding and we want to, you know, put our
24 special tweaks on it to make it our version of
25 header bidding like as Amazon has, as other

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1 organizations have.

2 It's similar to how when TCP was
3 created other engineers said is there a way to
4 make faster communication, so they came out with
5 UDP and that is what -- that is why I'm sitting
6 here as a security researcher saying that's
7 leadership.

8 MR. FREEMAN: Want to take a
9 break?

10 THE VIDEOGRAPHER: Off the record
11 at 5:58.

12 (Brief recess.)

13 THE VIDEOGRAPHER: On the record
14 at 6:08.

15 MR. FREEMAN: We have nothing
16 further at this time.

17 THE WITNESS: Thank you.

18 MR. FREEMAN: Okay we can go off
19 the record thank you.

20 THE VIDEOGRAPHER: Off the record
21 6:08 p.m. This ends today's testimony.

22 (Witness excused.)

23 - - -
24
25

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1 C E R T I F I C A T I O N

2 I, MARGARET M. REIHL, a
3 Registered Professional Reporter,
4 Certified Realtime Reporter, Certified
5 Court Reporter, Certified LiveNote
6 Reporter, do hereby certify that the
7 foregoing is a true and accurate
8 transcript of the testimony as taken
9 stenographically by and before me at the
10 time, place, and on the date
11 hereinbefore set forth.

12 I DO FURTHER CERTIFY that I
13 am neither a relative nor employee nor
14 attorney nor counsel of any of the
15 parties to this action, and that I am
16 neither a relative nor employee of such
17 attorney or counsel, and that I am not
18 financially interested in the action.

19
20 *Margaret Reihl*
21 -----

22 Margaret M. Reihl, RPR, CRR, CLR
23 CCR License #XI01497
24 NCRA License #047425
25

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1 ACKNOWLEDGMENT OF DEPONENT

2 I, ANTHONY J. FERRANTE, do hereby
3 certify that I have read the foregoing
4 pages and that the same is a correct
5 transcription of the answers given by me
6 to the questions therein propounded,
7 except for the corrections or changes in
8 form or substance, if any, noted in the
9 attached Errata Sheet.

10
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12 _____
13 ANTHONY J. FERRANTE DATE
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1 ERRATA

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